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Dear Reader

Welcome to this year's product catalogue from Tropica. I hope that this catalogue will provide you with the inspiration, ideas and desire to embark on new adventures in the world of the aquarist. With approximately 130 different types of aquarium plants as well as countless varieties, I wish you a pleasant reading in the following pages.

The catalogue should be seen as an appetizer and a good supplement to the more detailed information, articles, and descriptions found at www.tropica.com. You can also subscribe to our Newsletter on our web site so you can receive news and knowledge of what is happening at Tropica on an ongoing basis.

In general, we are delighted that the hobby is developing in a positive direction. Apart from a tremendous influx of new products to the industry, we are increasingly seeing that our distributors are concentrating on creating shops that consumers and ensure that sales staff can provide you with the best advice.

I hope you find our catalogue interesting. If you have any questions that it does not give the answers to, our web site can help you find the address of your local distributor who is always prepared to provide you with the advice you may need. Enjoy your reading!

Yours faithfully

Lars Green

Managing Director

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A PARADISE OF TROPICAL PLANTS WAY UP NORTH



Two things surprise most people who come into contact with Tropica Aquarium Plants for the first time. Nobody expects to find the world's leading producer of tropical aquarium plants in Denmark – a cold, windy country half a world away from the humid heat of the rain forest. And even fewer are prepared for the unique interplay between the latest technology and the committed, loving care that forms the basis for Tropica's uncompromising quality.

Tropica took a decisive step forward as a company in 2007. After more than 35 years' production at the same location, we moved to completely new fascilities on 1 May 2007. We made a major investment in a new nursery so we could continue to supply some of the best aquarium plants in the world. This 11,000 square metre electronically monitored nursery with accompanying biotechnology laboratory got off to a modest start in 1970 as the result of founder Holger Windeløv's passion for his hobby – a burning interest in aquarium plants. Today, Tropica employs about 50 people who are all infected by the enthusiasm that created the original business.

Plants are living organisms and, like everything else, they thrive best when they are treated with competent care and respect. Every year, Tropica cultivates several million aquarium plants in more than 130 different varieties that are exported to most countries in the world. Systematic research and comprehensive biotechnological knowledge combined with cultivation in an environment where computers constantly ensure the optimum nutrition and growth conditions naturally mean a great deal where quality is concerned. But we are convinced

that it is the heartfelt, genuine interest in the plants that is the most important reason why Tropica plants are recognised everywhere as the most beautiful, healthiest, and most robust aquarium plants on the market.

Rapid, reliable deliveries everywhere

Tropica is the preferred brand name in tropical aquarium plants in countries throughout the world. This places us under an obligation. So, in collaboration with the carriers we use, we have built up a rapid, efficient distribution system that is absolutely decisive when dealing with living plants. Together, we have organised a control and service system that minimizes the risk of faulty deliveries.

Tropica plants are individually packed in special packaging that protects them against physical damage. In addition, the plants are effectively protected against the influence of heat and cold during transport.

Everything has been optimised in relation to plant growth at our new nursery. But we have also devoted much thought to efficient production flow – all the way from potting to production to packing the plants. A flow that ensures the plants maintain their high quality throughout the process.

Our plants always reach our distributors in a fresh, attractive condition, ready for sale. There is always somebody at the office ready to help you if you have any questions. We speak all principal languages.

POTTING. PACKING AND EXPEDITION

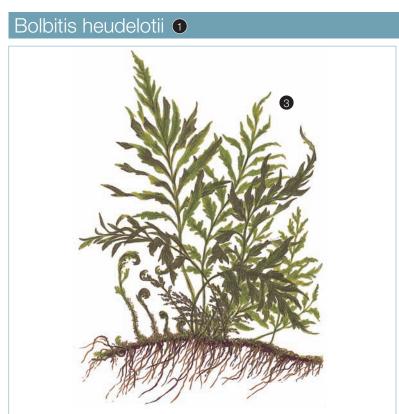






HOW TO USE THE CATALOGUE

The following instructions help you to make the best possible use of the plant catalogue and the stickers that accompany Tropica's plants. They provide the most necessary information on the plants, their sizes and varieties. Finally, there is a table that helps you get started with planting and looking after the plants.



A water fern with very beautiful transparent green leaves. When planting do not cover the rhizome because it will rot, and it is best to plant *Bolbitis heudelotii* on a root or stone. Keep the plant in position with fishing line until it has gained a hold. Easy to propagate by splitting the horizontal rhizome. Growth can be increased considerably by supplying CO₂, and is only optimal in soft, slightly acidic water.

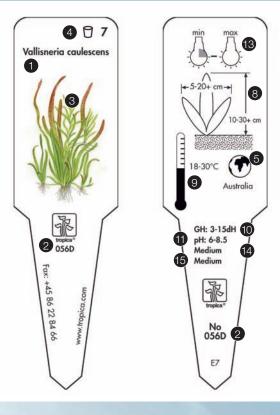


006

O O O DIFFICULT



EASY



1 THE PLANT'S LATIN NAME

DEMANDS

- 2 TROPICA'S ORDER NUMBER
- 3 WATER COLOUR ILLUSTRATIONS

The plants are illustrated by handpainted water colours, but the colours may not be exactly the same as those of the living plants. The illustrations do not reflect the size of the various plants in relation to each other. Please see the information about height and width in the chart.

4 VARIETIES AND PRICE GROUPS

POT: Plant produced in a round 5 cm pot with healthy, well-developed roots.

XL: Large mother plant produced in a 9 x 9 cm pot.

BDT: Bunched plants, with or without roots.

KN: Bulb plant with few small leaves.

POR: Portion of floating plant.

STK: Single pieces of plants in a bag.

PL: Plant without pot with healthy, well-developed roots and several leaves.

AquaDecor: Plants grown on lava, roots or coconut shells.

5 FAMILY

Name of the family the plant belongs to, for identifying related plants.

6 PICTURE OF SALES POT

A picture of the plant as it is obtained from Tropica – plants are often grown above water and therefore have a different appearance to the picture the aquarist has of the plant from the aquarium.

7 ORIGIN

The country or countries where the plant is most widespread.

Tropical (Pan): The plant can be found everywhere in the tropics.

Cosmopolitan: The plant can be found in most parts of the world.

Cultivar: Plant not found in the wild, produced by cultivation or breeding.

Plants marked (N) are protected by trade marks, and may not be cultivated commercially without a licence.

8 PLANT HEIGHT/WIDTH

Stated in cm. The range shows the average height after about 2 months in the aquarium in normal growing conditions. The plant often grows higher when conditions are exceptionally good. A + sign after the height figure indicates that the plant may grow much higher in favourable conditions.

9 TEMPERATURE

Stated in degrees Celsius. If the other growing conditions are suitable, the plant grows well in the range stated. The optimal temperature is at the middle of the range. Many plants can grow at higher temperatures if more light is supplied. Plants with a maximum temperature of 28° C can often flourish in temperatures of up to 35° C if light intensity is very high.

11 PH TOLERANCE

pH = 5-6.5 Acid pH = 6.5-7.5 Neutral pH = 7.5-9 Alkaline

12 PLANTING AND CARE

The letter refers to "Tips and tricks" with recommendations for planting and looking after the plant.

13 LIGHT 0000

1. Very low. 2. Low. 3. Medium. 4. High. 5. Very high.

If the other growing conditions are in order, the plant grows well in the range stated. Many factors influence the light conditions for the plants, e.g. whether they stand alone or are shaded by other plants. The use of fluorescent lighting and reflectors also has an impact. Lighting should be supplied for 10-12 hours daily.

14 GROWTH RATE

This information can be used when planting an aquarium.

1. Very slow. 2. Slow. 3. Medium. 4. Fast. 5. Very fast.

15 DEMANDS 00000

An indication of growing conditions required.

Easy: The plant makes no demands, or very few, on growing conditions in the aquarium. Thrives in all aquariums.

Medium: The plant makes a few demands on growing conditions but thrives in most aguariums.

Difficult: The plant makes great demands on growing conditions in the aquarium, e.g. many hours of intensive light.

Very difficult: The plant makes special demands on the growing environment, e.g. a great deal of light and soft water.

16 ENVIRONMENTAL PICTURE

A picture of the plant after it has adapted to the conditions in the aquarium – and also as inspiration for the use of the plant in the aquarium.

10 GH (WATER HARDNESS)

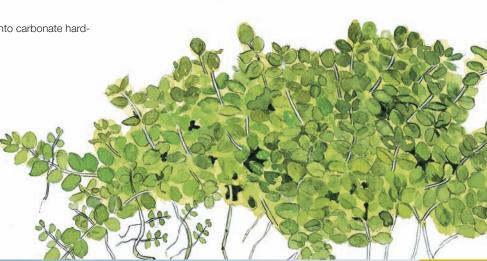
Summary table for converting catalogue figures into carbonate hardness (CH) and total hardness (GH).

 Soft
 CH 0-4 dh
 GH 0-6 dh

 Medium
 CH 5-10 dh
 GH 7-13 dh

 Hard
 CH 11-16 dh
 GH 14-20 dh

 Very hard
 CH >17 dh
 GH 14-20 dh



TIPS AND TRICKS FOR PLANTING AND CARE













CODE	TYPE	EXAMPLES	PLANTING AND CARE
А	Stem plants	Hygrophila, Alternanthera, Nesaea	Remove the pot and the mineral wool carefully from the roots. Plant the stems at intervals and spread the loose roots into the bottom layer. Pinch off the slips when trimming and they can be planted in the bottom layer.
В	Stem plants	Cabomba, Egeria	Bunches. Remove the lowest leaves and cover the remaining lowest leaves with the bottom layer – plant the stems at intervals. Pinch off the top shoots and plant them in the bottom layer.
С	Tuberous	Aponogeton, Nymphaea	Remove any pots and mineral wool and cover the tuber with the bottom layer. The shoot should be above the bottom layer. Remove any sick leaves before planting. Remove whole leaves when trimming. Tubers can be kept from two to four months (store in damp, cool conditions).
D	Rhizomatous	Anubias, Microsorum	Remove the pot and the mineral wool carefully from the roots. The root stem (rhizome) should not be covered fully by the bottom layer or it will rot. Plants can also be fastened to a stone or roots. Trim by cutting pieces from the root stem.
E	Rosulate	Echinodorus	Remove the pot and the mineral wool carefully from the roots. Remove the outermost leaves as they will die under water under any circumstances and the plant will rapidly develop new leaves adapted to conditions under water. Shorten the roots and spread them when planting. Remove whole leaves when trimming, pinch off offshoots and plant them in the bottom layer.
F	Rosulate	Cryptocoryne	Remove the pot and the mineral wool carefully from the roots. Remove any sick leaves. Plant the individual plants in the pot at intervals. Remove whole leaves or whole plants when trimming.
G	Stolon	Glossostigma, Hemianthus	Remove the pot and cut the mineral wool block so that about 1 cm is left together with the plants. Use this mineral wool as an anchor to hold the plant in the bottom layer. The pot contains many plants that can be divided into several groups (typically four to eight) and planted at intervals. Trim with scissors like a lawn.
Н	Stolon	Marsilea, Eleocharis	Remove the pot and cut the mineral wool block so that about 1 cm is left together with the plants. Use this mineral wool as an anchor to hold the plants in the bottom layer. Then cut down the plants until they are about 1 cm above the mineral wool. They will rapidly develop new leaves adapted to conditions under water. The pot contains many plants that can be divided into several groups (typically four to eight) and planted at intervals. Trim or thin with scissors.
I	Stolon	Vallisneria, Lilaeopsis	Remove the pot and the mineral wool carefully from the roots. Remove any sick leaves. Plant the individual plants in the pot at intervals. Remove whole leaves whole plants when trimming.
J	Floating plants	Salvinia, Ceratophyllum	Portions. Place them on the surface (<i>Ceratophyllum</i> can also be planted in the bottom layer). Trim by removing material from the surface.
К	Mosses	Riccia, Monosolenium	Portions. Can be used as floating plants or fastened to a stone or root where they will form cushions or carpets. Trim by removing material or with scissors.
L	Bulb	Crinum	Separate the bulb carefully from the mineral wool. Remove any sick leaves before planting the bulb in the bottom layer. Parts of the bulb must be above the bottom layer. Trim by removing whole leaves.
М	Various	Cladophora, Ceratopteris	Examples of plants that can be used in different ways – search for information on these and other plants on our web site.

Tropica AquaDecor

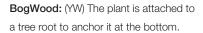
In Nature, some plants used in the aquarium grow naturally on stones and tree roots. Prime examples are *Anubias* and *Microsorum*. The typical biotope for such plants is close to a waterfall; either the lake formed beneath the waterfall or the area around the waterfall, which is continuously bathed in a fine mist or spray. The plants colonise fissures and hollows in stones and tree roots. The AquaDecor varieties opens up new opportunities to create landscapes in an aquarium or can be used in a simple bowl on a table where the plant and lava stone are highly decorative in themselves.

AquaDecor varieties

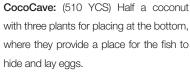
BankWood: (Z) The plant is attached to a tree root with suction discs at one end to attach it so that it appears to "grow" out of the glass of the aquarium.



BankWood Ornamental: (O) The plant is attached to a tree root with suction discs to attach it flat against the glass of the aquarium.



BogWood Duet: (008N YWX) Two or more plants are attached to a tree root to anchor them to the bottom.











Ordering code

The plant's catalogue number [e.g. 008A],

- Y: AquaDecor to be placed at the bottom
- Z: BankWood with suction disc at the end
- O: BankWood Ornamental with suction disc at back
- W: Attached to tree root
- L: Attached to lava
- C: Attached to coconut
- M, S, X: Size

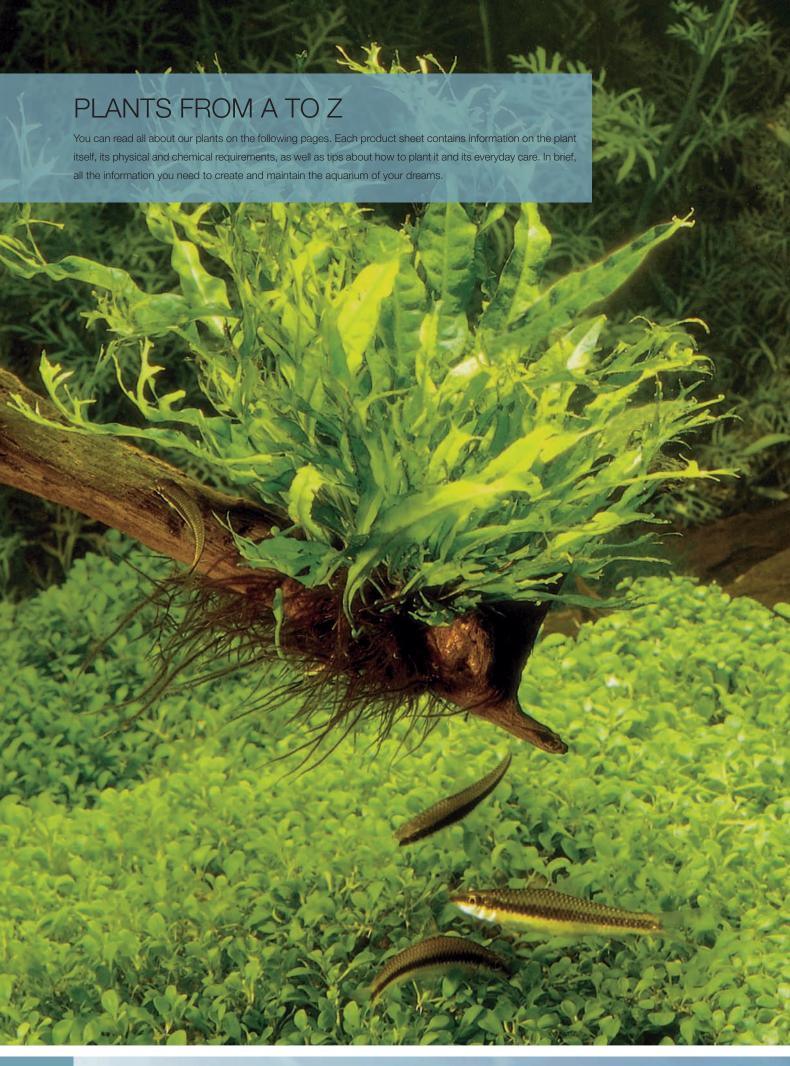
Example: 008A YWS would be a *Microsorum ptero- pus* 'Narrow' on a small (10-25 cm) tree root to be placed at the bottom.

DecorRock: (YL) The plant is attached to a piece of lava to anchor it at the bottom.







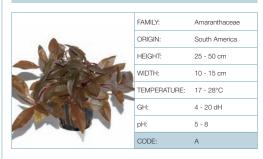


023



The purple colour underneath Alternanthera reineckii 'Pink' leaves provides an effective contrast to the many green plants in an aquarium - particularly when planted in groups. Good light encourages the leaves to turn red. Most Alternanthera-species are difficult to grow, but this one is relatively undemanding. Easy to propagate by nipping off the terminal bud and planting it in the bottom. This also makes the mother plant more bushy, because more side shoots are formed.

PRICE GROUP: POT 5 XL 9 BDT 3



LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY		DIFFICULT



Alternanthera reineckii 'Purple' (lilacina)

023B



Alternanthera reineckii 'Purple' needs plenty of light to grow and form dark-red leaves. In open aquariums it grows willingly up through the surface, and like other difficult plants growth improves considerably if CO_2 is added. Shortage of micronutrients results in pale leaves. Like other stem plants Alternanthera reineckii 'Purple' is best in groups.



FAMILY:	Amaranthaceae
ORIGIN:	South America
HEIGHT:	15 - 40 cm
WIDTH:	10 - 15 cm
TEMPERATURE:	17 - 28°C
GH:	4 - 13 dH
pH:	5 - 7
CODE:	A

LIGHT:	LOW	O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Anubias barteri var. angustifolia



Anubias barteri var. angustifolia is a beautiful plant with long, narrow leaves. Anubias barteri var. angustifolia used to be sold as Anubias afzelii, but the latter is actually a much larger species. It is grown in the same conditions as Anubias barteri var. nana. It is not eaten by herbivorous fish.

PRICE GROUP: POT 8



LIGHT:	LOW	$\bullet \bullet \bullet \bullet \bigcirc$	HIGH
GROWTH RATE:	SLOW	$\bigcirc \bullet \bigcirc \bigcirc \bigcirc$	FAST
DEMANDS:	EASY		FICULT



Anubias barteri var. barteri

101A

Araceae West Africa

25 - 45 cm

15+ cm

20 - 30°C 1 - 30 dH 5.5 - 9

D



Anubias barteri var. barteri is an undernanding plant. It grows somewhat larger than Anubias barteri var. nana but is grown in the same conditions. Anubias barteri varies considerably in terms of size and leaf shape. Like other Anubias-species, it is best planted in a shady spot to restrict algae growth on the leaves. It is also suitable for terrariums and aquaterrariums. Herbivorous fish do not eat the very tough and robust leaves.



LIGHT:	LOW	● ● ● ○ ○ HIGH
GROWTH RATE:	SLOW	• O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



101U



Anubias barteri var. caladiifolia "1705" is also simply called "1705" (the number used by an Australian tissue propagation laboratory). It is a very beautiful variety with heartshaped leaves. The leaves live for several years, so Anubias barteri var. caladiifolia can easily form large groups despite its slow growth. A group of Anubias barteri var. caladiifolia growing more than 50 cm wide in a few years is not unusual.

PRICE GROUP: POT 8 XL 12



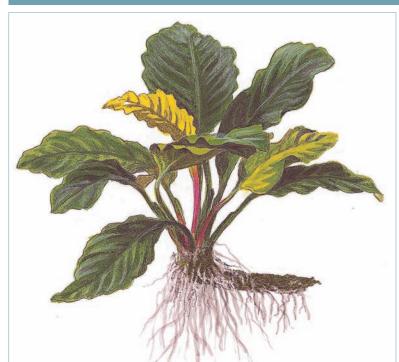
	FAMILY:	Araceae
	ORIGIN:	West Africa
	HEIGHT:	7 - 30+ cm
	WIDTH:	15+ cm
ì	TEMPERATURE:	20 - 30°C
	GH:	1 - 20 dH
	pH:	5.5 - 8
	CODE:	D

LIGHT:	LOW	O ● ● O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Anubias barteri "coffeefolia"

101G



Anubias barteri "coffeefolia" is a very beautiful, low variety of Anubias barteri. It is characteristic that the leaves arch considerably between the leaf ribs, and the new leaves are red-brown. The colour combination and leaf shape make it an attractive variety in both large and small aquariums. It flowers frequently under water but does not produce seeds there. Anubias-species seem to grow so slowly that they do not realise that they have been submerged. It is not eaten by herbivorous fish.

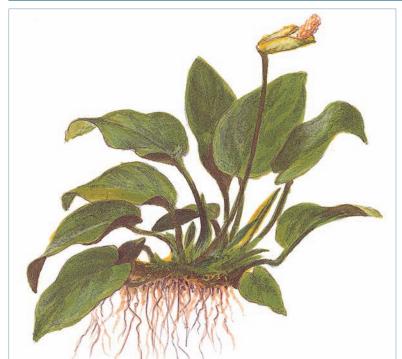


FAMILY:	Araceae
ORIGIN:	Cultivar
HEIGHT:	15 - 25 cm
WIDTH:	10+ cm
TEMPERATURE:	20 - 30°C
GH:	1 - 30 dH
pH:	5.5 - 9
CODE:	D

LIGHT:	LOW	O O O HIGH
GROWTH RATE:	SLOW	● ○ ○ ○ FAST
DEMANDS:	EASY	O O O DIFFICULT



Anubias barteri var. nana



Anubias barteri var. nana is a small, attractive plant which thrives in all conditions. It grows slowly, and the leaves survive for several years, giving slow-growing algae the chance to become established. The best result is achieved by planting on a stone or tree root. Fishing line can be used to attach the plant until it gains a hold. If planted on the bottom the rhizome must not be covered because it tends to rot. It flowers frequently under water. It is not eaten by herbivorous fish.

PRICE GROUP: POT 8 XL 12 AquaDecor



LIGHT:	LOW	$\bullet \bullet \bullet \circ \circ$	HIGH
GROWTH RATE:	SLOW	\bullet	FAST
DEMANDS:	EASY	• O O O DIF	FICULT



Anubias barteri var. nana 'Petite'

101H



A mutation which appeared in cultivation at the Oriental aquarium plant nursery in Singapore. Grows very slowly, and can be difficult to keep in healthy growth. It is most decorative when attached to stones or roots, and like other *Anubias* should be attached with fishing line until it gains a hold. A speciality plant which is ideal for miniature landscapes in small aquariums.



FAMILY:	Araceae
ORIGIN:	Cultivar
HEIGHT:	3 - 5 cm
WIDTH:	5 - 10+ cm
TEMPERATURE:	20 - 30°C
GH:	1 - 30 dH
pH:	6 - 8
CODE:	D

LIGHT:	LOW	● ● ● ○ HIGH
GROWTH RATE:	SLOW	• O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Aponogeton boivinianus



Aponogeton boivinianus is a large, strong plant which is only suitable for large aquariums. In favourable conditions it can form very large leaves (up to 80 cm long and 8 cm wide). The oldest leaves are deep dark-green, while younger leaves are light-green and sometimes brownish until they are fully developed. In the wild Aponogeton boivinianus is found in fast-flowing water, and it prefers some flow in the aquarium water. It needs a dormant period when the root does not produce leaves.

PRICE GROUP: POT 9 KN 7

FAMILY:	Aponogetonaceae
ORIGIN:	Africa
HEIGHT:	30 - 60+ cm
WIDTH:	20 - 30+ cm
TEMPERATURE:	16 - 26°C
GH:	9 - 20 dH
pH:	6 - 8
CODE:	С

LIGHT:	LOW	\bigcirc	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY		FICULT



Aponogeton crispus

083



Aponogeton crispus looks good in any aquarium with its light-green, transparent leaves. It makes few demands, although growth is always best in soft, slightly acidic water with a nutritious bottom. In such conditions the plant produces a mass of leaves, and it flowers very frequently in optimum conditions. Aponogeton crispus is generally found in ponds that are only filled with water in the rainy season, but it does not need a dormant period in the aquarium.

FAMILY:	Aponogetonaceae
ORIGIN:	Southeast Asia
HEIGHT:	25 - 50 cm
WIDTH:	15 - 30 cm
TEMPERATURE:	15 - 32°C
GH:	1 - 20 dH
pH:	5.5 - 8
CODE:	С

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT

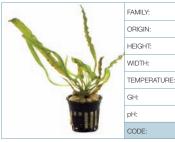


Aponogeton longiplumulosus



Aponogeton longiplumulosus has large, fluted leaves, making it a wonderful plant which can be recommended for large aquariums. It is relatively undemanding, and makes no special demands on water quality. It also flowers frequently, making it a beautiful addition to any large open aquarium. It stops growing at regular intervals, but normally starts again after a few weeks of dormancy.

PRICE GROUP: POT 9 KN 7



FAMILY:	Aponogetonaceae
ORIGIN:	Africa
HEIGHT:	35 - 60 cm
WIDTH:	25 - 50 cm
TEMPERATURE:	18 - 26°C
GH:	1 - 13 dH
pH:	5,5 - 8
CODE:	С

LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Aponogeton madagascariensis





Aponogeton madagascariensis is a speciality in botanical gardens all over the world. Aponogeton madagascariensis makes such high demands on water quality and the bottom that it can only be recommended as a solitary plant in large, specialised aquariums in which the water is replaced frequently. There are several varieties, with different structures and leaf widths.

PRICE GROUP: POT 9 KN 7

FAMILY:	Aponogetonaceae
ORIGIN:	Africa
HEIGHT:	25 - 50+ cm
WIDTH:	25 - 30+ cm
TEMPERATURE:	15 - 26°C
GH:	1 - 20 dH
pH:	5 - 7.5
CODE:	С

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Aponogeton ulvaceus



Aponogeton ulvaceus is one of the most beautiful species in the Aponogeton-family. The leaves are delicate light-green and transparent with fluted margin. A single root can produce more than 40 leaves. This means that the plant is best as a solitary plant in large aquariums. It is relatively tolerant, and thrives in both soft and hard water, particularly if ${\rm CO_2}$ is added. There are many varieties of Aponogeton ulvaceus, some of which need a dormant period when the root does not produce leaves.

PRICE GROUP: POT 9 KN 7

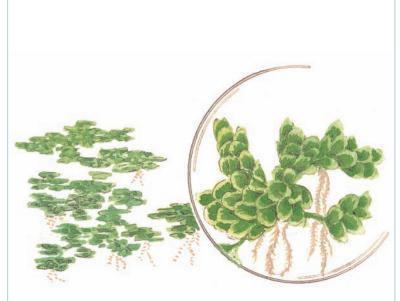


LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	\bigcirc	DIFFICULT



Azolla caroliniana

-013



Azolla caroliniana is a small floating fern housing blue-green algae in its leaves. These algae are capable of absorbing nitrogen from the air, which can then be used by the plant. Azolla caroliniana has become a menace all over the tropics, because it covers lakes and deprives the original aquatic plants of light. Used as nitrogen fertiliser in rice paddies, and as animal feed. There are several related varieties on the market, with similar appearance. A decorative plant for open aquariums.



FAMILY:	Azollaceae
ORIGIN:	America
HEIGHT:	1 - 2 cm
WIDTH:	1+ cm
TEMPERATURE:	5 - 26°C
GH:	1 - 20 dH
pH:	6 - 8
CODE:	J

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





Bacopa australis was discovered in southern Brazil (australis = southern), and it does not come from Australia, as might otherwise be assumed from its name. Like the other Bacopa-species, Bacopa australis is also easy to grow in an aquarium. Under certain conditions it creeps across the bottom to form an elegantly decorative light green cushion. When Bacopa australis grows in a good light, the leaves become reddish. It is easily propagated by taking side shoots and planting them in the substrate.

PRICE GROUP: POT 5



FAMILY:	Scrophulariaceae
ORIGIN:	South America
HEIGHT:	7 - 30 cm
WIDTH:	2 - 4+ cm
TEMPERATURE:	15 - 32°C
GH:	1 - 30 dH
pH:	6 - 8
CODE:	А

LIGHT:	LOW	O ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Bacopa caroliniana

043



Bacopa caroliniana has been used as an aquarium plant for many years. Apart from relatively good light it makes few demands. Its slow growth rate makes it one of the few stem plants that do not need much attention. Like most stem plants, it is most decorative when planted in small groups. Easy to propagate by cuttings; take a side shoot and plant it in the bottom.

PRICE GROUP: POT 5 XL 9



	FAMILY:	Scrophulariaceae
	ORIGIN:	North America
	HEIGHT:	20 - 30+ cm
	WIDTH:	3 - 6 cm
١	TEMPERATURE:	15 - 28°C
	GH:	4 - 20 dH
	pH:	5 - 8
	CODE:	А

LIGHT:	LOW	\bigcirc	HIGH
GROWTH RATE:	SLOW	$\circ \bullet \circ \circ \circ$	FAST
DEMANDS:	EASY	0 • 0 0 0	DIFFICULT



Bacopa monnieri



Bacopa monnieri is an easy and highly recommended plant which thrives in almost all conditions. It is a plant which is suitable for the hard water found in many European aquariums. Propagate by cuttings; take a side shoot or terminal bud and plant it in the bottom. Most beautiful when a great number of shoots are planted in a group.

PRICE GROUP: POT 4



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT

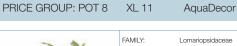


Bolbitis heudelotii

006



A water fern with very beautiful transparent green leaves. When planting do not cover the rhizome because it will rot, and it is best to plant *Bolbitis heudelotii* on a root or stone. Keep the plant in position with fishing line until it has gained a hold. Easy to propagate by splitting the horizontal rhizome. Growth can be increased considerably by supplying CO₂, and is only optimal in soft, slightly acidic water.





HEIGHT:	15 - 40 cm
WIDTH:	15 - 25+ cm
TEMPERATURE:	20 - 28°C
GH:	1 - 13 dH
pH:	5 - 7
CODE:	D

West Africa

LIGHT:	LOW	● ● ● ○ HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT

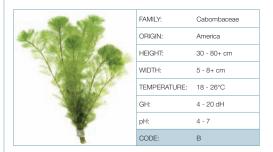


Cabomba caroliniana



A very popular aquarium plant owing to its beautiful foliage. The least demanding of the *Cabomba*-species, but still causes problems in poorly lit aquariums. If there is not sufficient light, try *Limnophila sessiliflora*, which requires less light. Most decorative when planted in groups. Eaten locally as a vegetable.

PRICE GROUP: BDT 3

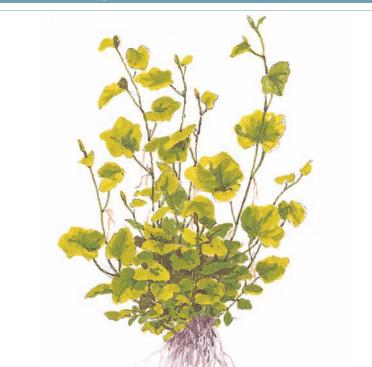


LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O O FAST
DEMANDS:	EASY	O O O O DIFFICULT



Cardamine lyrata

024



Cardamine lyrata is actually a marsh plant. But it is also a familiar aquarium plant which thrives under water. A characteristic trailing growth form makes it highly decorative, and "water roots" often form on the plant itself. Plant in groups, and make sure the water temperature does not exceed 28 degrees for long (this makes the leaves much smaller and the plant more leggy). Also suitable in garden ponds in the summer.



FAMILY:	Brassicaceae
ORIGIN:	Asia
HEIGHT:	20 - 50 cm
WIDTH:	15 - 30 cm
TEMPERATURE:	15 - 24°C
GH:	4 - 20 dH
pH:	6 - 8
CODE:	А

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





Ceratophyllum demersum 'Foxtail'



Ceratophyllum demersum 'Foxtail' was found in a smaller-tributary in Bolivia during an expedition to Rio Guapore, a boundary river between Brazil and Bolivia. Ceratophyllum has no roots as such, but it can still be planted in the bottom of an aquarium. 'Foxtail' differs from Ceratophyllum demersum because its leaves are closer together and it has lateral shoots, which gives it an attractive, compact appearance. The plant also distinguishes itself because it is hardier and its stalks do not break as easily as those of other Ceratophyllum varieties.

PRICE GROUP: POR 8



FAMILY:	Ceratophyllaceae
ORIGIN:	Cosmopolitan
HEIGHT:	5 - 80+ cm
WIDTH:	5 - 15+ cm
TEMPERATURE:	10 - 28°C
GH:	4 - 30 dH
pH:	6 - 9
CODE:	J

LIGHT:	LOW	● ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Ceratopteris thalictroides

005A



This plant normally grows fast, but the addition of the necessary to promote growth. In small open aquariums it can grow out of the aquarium and form beautiful surface leaves. The finely branched leaves are very decorative and provide good contrast to other leaf shapes. In good light *Ceratopteris thalictroides* grows fast and helps prevent algae by consuming large amounts of nutrients. This makes it a good starter plant in small aquariums.



FAMILY:	Pteridaceae
ORIGIN:	Tropical (Pan)
HEIGHT:	15 - 30 cm
WIDTH:	10 - 20 cm
TEMPERATURE:	20 - 28°C
GH:	1 - 30 dH
pH:	5 - 9
CODE:	М

LIGHT:	LOW	O O O HIGH
GROWTH RATE:	SLOW	O O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Cladophoraceae

Asia and Europe

3 - 10 cm

3 - 10 cm 5 - 28°C

6 - 8,5

М



Cladophora aegagropila is not really a plant, but a ball of algae, so it is a decorative exception from the rule about avoiding algae at all costs. It is normally found in shallow lakes, where the movement of the waves forms it into a sphere. In an aquarium it must be turned regularly to keep it in shape. Cladophora aegagropila can be divided into smaller pieces, which become spherical with time, or which form a carpet, if attached to roots and stones. Protected in parts of Japan.

PRICE GROUP: STK 5



LIGHT:	LOW	● ● ● ○ HIGH
GROWTH RATE:	SLOW	● ○ ○ ○ ○ FAST
DEMANDS:	EASY	O O O DIFFICULT



Crinum calamistratum

094A

Amaryllidaceae

West Africa

40 -120 cm

20 - 30 cm

20 - 28°C 1 - 20 dH

5,5 - 8



Crinum calamistratum is a very graceful bulbous plant with dark-green, very narrow leaves. It forms smaller bulbs than the other Crinum-species, and demands more light. In the aquarium plants that are thriving form a number of small bulbs. It is not eaten by herbivorous fish. It can also be used in brackish aquariums with low salt concentrations.

PRICE GROUP: POT 9 XL 13



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Crinum natans 094



Crinum natans is a very beautiful and graceful bulbous plant with dark-green leaves. Plant so the top 2/3 of the bulb is visible. When the plant grows older (if it is thriving) it sometimes forms small bulbs and sends a flower stem up to the water surface with a beautiful and aromatic lily flower. The plant varies considerably in leaf width and the shape of the leaf margin. It is also suitable for indoor ponds, and is not eaten by herbivorous fish.

PRICE GROUP: POT 9 XL 13



	FAMILY:	Amaryllidaceae
	ORIGIN:	West Africa
6	HEIGHT:	50-150 cm
	WIDTH:	20 - 30 cm
Þ	TEMPERATURE:	20 - 28°C
	GH:	1 - 20 dH
	pH:	5,5 - 8
	CODE:	L

LIGHT:	LOW	O ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Crinum thaianum 093



Crinum thaianum is a distinctive bulbous plant belonging to the lify family. It is undemanding apart from the fact that it needs plenty of space. Plant so the top 2/3 of the bulb is visible, because otherwise the bulb tends to rot. When the plant grows older it sometimes sends a flower stem up to the water surface with an aromatic, elegant lify flower. Herbivorous fish leave it alone due to its tough leaves. In Thailand the bulb is used in a cream used to soften the skin. It is also suitable for indoor ponds.

PRICE GROUP: POT 8 XL 10



FAMILY:	Amaryllidaceae
ORIGIN:	Southeast Asia
HEIGHT:	60 - 200+ cm
WIDTH:	20 - 25 cm
TEMPERATURE:	18 - 28°C
GH:	1 - 30 dH
pH:	5.5 - 9
CODE:	L

LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	$0 \bullet 0 0 0$	DIFFICULT





Cryptocoryne beckettii "petchii" is a small variety of Cryptocoryne beckettii, which has beautiful, slightly fluted leaf margins. Like many other Cryptocoryne, the leaf colour and shape depends largely on environmental conditions in the aquarium. See other Cryptocoryne for further information.

PRICE GROUP: POT 7



	FAMILY:	Araceae
	ORIGIN:	Southeast Asia
	HEIGHT:	10 - 15 cm
٠	WIDTH:	8 - 15 cm
	TEMPERATURE:	20 - 30°C
	GH:	1 - 20 dH
	pH:	5.5 - 8
	CODE:	F

LIGHT:	LOW	○ ● ● ○ HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Cryptocoryne crispatula var. balansae



Cryptocoryne crispatula var. balansae is the oldest known variety of Cryptocoryne crispatula. In the region it comes from in southern Thailand there are limestone mountains, and the water can be very hard. Like many other Cryptocoryne it needs to acclimatise before growth starts in earnest. In recent years a narrow-leaf variety called Cryptocoryne crispatula var. flaccidifolia has often been sold.



FAMILY:	Araceae
ORIGIN:	Southeast Asia
HEIGHT:	20 - 60+ cm
WIDTH:	20 - 15+ cm
TEMPERATURE:	20 - 28°C
GH:	4 - 30 dH
pH:	5 - 9
CODE:	F

LIGHT:	LOW	HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Cryptocoryne parva



Cryptocoryne parva is the smallest of all Cryptocoryne. It is one of the few species that does not significantly change its leaf shape and colour depending on cultivation conditions. It needs more light than most other Cryptocoryne because it almost loses its leaf blade under water. So it must never be overshadowed by other plants. Individual plants should be planted a few centimetres apart, and after about six months they will form a cohesive low group of plants. Recommended for foreground planting.

PRICE GROUP: POT 8



FAMILY:	Araceae
ORIGIN:	Asia
HEIGHT:	5 - 10 cm
WIDTH:	5 - 7 cm
TEMPERATURE:	20 - 29°C
GH:	1 - 20 dH
pH:	5.5 - 8
CODE:	F

LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O DIFFICULT



Cryptocoryne undulata



It is characteristic for this species that it has a small internodium between each leaf. Normally the leaves of Cryptocoryne grow out from a rosette which is so compact that the stem between the individual leaves is invisible. When you buy Cryptocoryne in pots, it is important that they are not planted in a lump but separated into smaller portions and preferably planted a few centimetres apart. See other Cryptocoryne for further information.



	FAMILY:	Araceae
+	ORIGIN:	Asia
	HEIGHT:	10 - 15+ cm
	WIDTH:	10 - 15 cm
	TEMPERATURE:	20 - 28°C
	GH:	1 - 20 dH
	pH:	5.5 - 8
	CODE:	F

LIGHT:	LOW	$\bigcirc \bullet \bullet \bullet \bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	$\bigcirc \bullet \bigcirc \bigcirc \bigcirc$	DIFFICULT



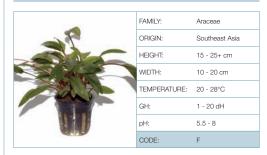
Cryptocoryne undulata "broad leaves"

110A



Unlike the common Cryptocoryne undulata, this plant has wider leaves and a beautiful, flecked leaf pattern. It also grows larger. It is known botanically as a triploid variety. See other Cryptocoryne for further information.

PRICE GROUP: POT 7



LIGHT:	LOW	\bigcirc • • • •	HIGH
GROWTH RATE:	SLOW	00000	FAST
DEMANDS:	EASY		FFICULT



Cryptocoryne wendtii "brown"

109C



Cryptocoryne wendtii "brown" is a beautiful brown variety of Cryptocoryne wendtii. It is a mistake to believe that Cryptocoryne require soft water. In large parts of Sri Lanka the water is hard, so Sri Lanka Cryptocoryne are almost all suitable for hard European water. If the plant is affected by the so-called "cryptocoryne disease", do not remove it from the aquarium because a few weeks later it will produce new shoots. See other Cryptocoryne for further information.



	FAMILY:	Araceae
	ORIGIN:	Asia
	HEIGHT:	15 - 25 cm
þ	WIDTH:	10 - 15 cm
	TEMPERATURE:	20 - 30°C
	GH:	1 - 30 dH
	pH:	5.5 - 9
	CODE:	F

LIGHT:	LOW	○ ● ● ○ HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





Cryptocoryne wendtii "green" is suitable for small aquariums. When grown in an open space the leaves will virtually lie on the bottom. Like most other Sri Lanka Cryptocoryne, it also grows well in hard water. Like many other plants, it can be affected by "Cryptocoryne disease". One way to prevent this is by only leaving the 4-5 newest leaves on the plant when planting. It is a good foreground plant, even in small aquariums. See other Cryptocoryne for further information.

PRICE GROUP: POT 7



	FAMILY:	Araceae
	ORIGIN:	Southeast Asia
	HEIGHT:	5 - 10+ cm
1	WIDTH:	8 - 10 cm
	TEMPERATURE:	20 - 30°C
	GH:	1 - 30 dH
	pH:	5.5 - 9
	CODE:	F

LIGHT:	LOW	● ● ● ○ HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Cryptocoryne wendtii 'Mi Oya'

109D



This beautiful variety of Cryptocoryne wendtii is only found in the river Mi Oya. It has characteristic red-brown, slightly hammered leaves. Many Cryptocoryne can grow at high temperatures. In the wild this plant is found in streams with a temperature of more than 30 degrees C. At even higher temperatures the light intensity must be higher or the days longer. See other Cryptocoryne for further information.



FAMILY:	Araceae
ORIGIN:	Southeast Asia
HEIGHT:	25 - 35 cm
WIDTH:	15 - 30 cm
TEMPERATURE:	20 - 32°C
GH:	1 - 30 dH
pH:	5.5 - 8
CODE:	F

LIGHT:	LOW	$\bigcirc \bullet \bullet \bullet \bigcirc$	HIGH
GROWTH RATE:	SLOW	$\circ \bullet \circ \circ \circ$	FAST
DEMANDS:	EASY	\bullet	DIFFICULT

109E



PRICE GROUP: POT 7



LIGHT:	LOW	\bigcirc • • • •	HIGH
GROWTH RATE:	SLOW	$00 \bullet 00$	FAST
DEMANDS:	EASY	•0000	DIFFICULT



space the leaves will virtually lie on the bottom. It is suitable for small aquariums. Like most other Sri Lanka Cryptocoryne, it also grows well in hard water. See other Cryptocoryne for further information.

Cryptocoryne x willisii

107



There is some confusion about the name of this plant, It used (mistakenly) to be called *Cryptocoryne nevillii*, but this is the name of a species that has never been used in aquariums. Like many other *Cryptocoryne*, not much happens the first month after planting. But then it starts to grow, and willingly produces plenty of runners which form a compact group. See other *Cryptocoryne* for further information.



FAMILY:	Araceae
ORIGIN:	Southeast Asia
HEIGHT:	7 - 20+ cm
WIDTH:	7 - 15 cm
TEMPERATURE:	20 - 30°C
GH:	1 - 20 dH
pH:	5.5 - 8
CODE:	F

LIGHT:	LOW	\bigcirc	HIGH
GROWTH RATE:	SLOW	$\bigcirc \bullet \bigcirc \bigcirc \bigcirc$	FAST
DEMANDS:	EASY	$\bigcirc \bullet \bigcirc \bigcirc \bigcirc$	DIFFICULT



Cyperus helferi 133A



Cyperus species are widespread all over the tropics, but only a few of them are good underwater plants. Cyperus helferi is the first Cyperus-species used in aquariums. It requires a relatively large amount of light, and CO_2 addition is recommended to promote growth. In aquariums with good water flow the plant sways beautifully in the current.

PRICE GROUP: POT 7

FAMILY:	Cyperaceae
ORIGIN:	Southeast Asia
HEIGHT:	20 - 35 cm
WIDTH:	15 - 25 cm
TEMPERATURE:	20 - 30°C
GH:	1 - 20 dH
pH:	5 - 7.5
CODE:	Е

LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc \bullet \bigcirc \bigcirc \bigcirc$	FAST
DEMANDS:	EASY	$000 \bullet 0$	DIFFICULT



Didiplis diandra

031



Didiplis diandra is a fine foreground plant which should be planted in small groups. In good light it develops red shoot tips which form a beautiful contrast with other green plants. A demanding plant which needs a lot of light and prefers soft water. CO_2 addition boosts growth considerably. Also known as Peplis diandra.



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O DIFFICULT



DID YOU KNOW: Tropica's tissue laboratory

Tropica's tissue laboratory opened in 1994 and today more than a million plants are produced there annually for our own production, distributed between more than 50 genera



Echinodorus 'Aquartica'



Characteristic of *Echinodorus* 'Aquartica' are its round, bright green leaves. Its compact, low habit makes it suitable as a decorative solitary plant. Slow growing and easy to care for, *Echinodorus* 'Aquartica' retains the refreshing green colour of its leaves in normal lighting and nutrient conditions in the aquarium. The plant is a cross between several different cultivated plants, including *Echinodorus horemanii* and several round-leafed *Echinodorus* species. *Echinodorus* 'Aquartica' was developed by Kristian Iversen from the ''Aquartica' company.

PRICE GROUP: POT 7



FAMILY:	Alismataceae
ORIGIN:	Cultivar
HEIGHT:	10 - 20+ cm
WIDTH:	10 - 20+ cm
TEMPERATURE:	18 - 28°C
GH:	4 - 20 dH
pH:	6.5 - 8
CODE:	Е

LIGHT:	LOW	O ● ● O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Echinodorus x barthii

072A



Echinodorus x barthii is a decorative and beautiful solitary plant for large aquariums. The leaves change colour from dark-red in the youngest leaves to dark-green in the oldest. The colour develops well when the light intensity is high and there are sufficient micro-nutrients in the aquarium. A nutritious bottom and CO_2 addition promote growth. This plant takes a lot of light from plants underneath, so it must be pruned occasionally. It used to be sold as "Double Red".

PRICE GROUP: POT 8 XL 11



	FAMILY:	Alismataceae
0	ORIGIN:	Cultivar
)	HEIGHT:	25 - 50 cm
	WIDTH:	20 - 30 cm
	TEMPERATURE:	16 - 28°C
	GH:	4 - 20 dH
	pH:	6 - 9
	CODE:	Е

LIGHT:	LOW	\bigcirc	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	00•00	DIFFICULT

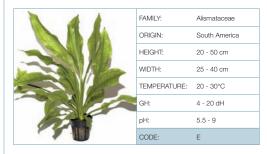


Echinodorus bleheri (bleherae)



Echinodorus bleheri is undemanding and beautiful. A nutritious bottom promotes growth, but the plant needs pruning to prevent it depriving plants underneath of light. Echinodorus bleheri does well even in poorly illuminated aquariums, as it grows towards the light. It is a hardy and easy solitary plant for both beginners and the more experienced with quite large aquariums. It has been sold under the name "Paniculatus".

PRICE GROUP: POT 5 XL 10



LIGHT:	LOW	\bigcirc • • • •	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY		FICULT

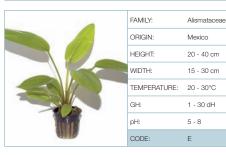


Echinodorus cordifolius ssp. fluitans

073D



A comparatively fast-growing *Echinodorus*, suitable for large aquariums. Unlike other round-leafed varieties of the species, *Echinodorus cordifolius ssp. fluitans* is less likely to grow up over the water surface. If it grows large enough, it forms large leaves just under the surface instead.



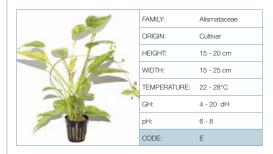
LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





Echinodorus cordifolius 'Tropica Marble Queen' is a variety cultivated by Oriental Aquarium in Singapore. Plants grown in marshy conditions have beautiful marbling which sometimes fades under water. The plant demands a relatively large amount of light, and CO₂ addition is recommended to promote growth. It is very suitable for low open aquariums, where the leaves above water have clearer marbling. The leaves also resist drying out.

PRICE GROUP: POT 8



LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY		FFICULT



Echinodorus macrophyllus

073



Echinodorus macrophyllus is one of the large, orbiculate "sword" plants which grow up out of even large aquariums in good growing conditions. If light is available less than 11 hours a day it is easier to keep down inside the aquarium. It is suitable for open aquariums, where it forms decorative heart-shaped leaves above the water surface. It is a good idea to spray the plant to prevent it drying out. It used to be sold as Echinodorus "radicans".

PRICE GROUP: POT 7 XL 11



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





In the 1970's coloured aquarium plants were rare, which is why *Echinodorus osiris* with its red colour quickly became popular. A nutritious bottom promotes growth, and when there is a shortage of micro-nutrients new leaves turn pale, thus indicating that fertiliser may be necessary. It is generally an undemanding plant which is suitable for both soft and hard water. The red colour of the leaves grows stronger at higher light intensities. It used to be sold as *Echinodorus rubra*. It is not eaten by herbivorous fish.

PRICE GROUP: POT 8



FAMILY:	Alismataceae
ORIGIN:	South America
HEIGHT:	25 - 50 cm
WIDTH:	20 - 30 cm
TEMPERATURE:	15 - 28°C
GH:	1 - 20 dH
pH:	5.5 - 8
CODE:	Е

LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Echinodorus 'Ozelot'

073F



Echinodorus 'Ozelot' is a decorative hybrid between Echinodorus schluteri 'Leopard' and Echinodorus x barthii. Naturally, it is the elliptical black spots on the red-brown leaves that have given this plant the name 'Ozelot'. The spots are darkest on the youngest leaves, and unlike many other spotted Echinodorus, 'Ozelot' retains its spots even at low light intensity. It is an undemanding, good plant for beginners.

PRICE GROUP: POT 9 XL 11



FAMILY:	Alismataceae
ORIGIN:	Cultivar
HEIGHT:	20 - 40+ cm
WIDTH:	25 - 30 cm
TEMPERATURE:	15 - 30°C
GH:	4 - 30 dH
pH:	6 - 9
CODE:	Е

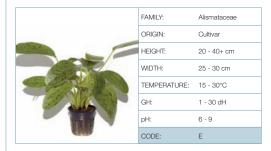
LIGHT:	LOW	O • • • HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





A beautiful, dark-green variety of *Echinodorus* 'Ozelot'. The dark spots form a bigger contrast on the light leaves. The leaf margin is fluted. A nutritious bottom promotes growth. It is an easy and highly recommended plant, which thrives in almost all conditions.

PRICE GROUP: POT 9 XL 11



LIGHT:	LOW	\bigcirc • • • •	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY		FFICULT



Echinodorus palaefolius var. latifolius

076



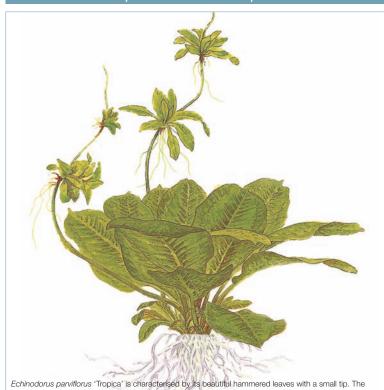
In marshy conditions Echinodorus palaefolius var. latifolius has round leaves with a horizontal leaf base.

Under water the leaves are narrower and longer. In the aquarium it tends to grow out of the water. This can be prevented by removing the long leaves just before they reach the water surface. The next leaves will then become shorter and the plant will remain under water. In open aquariums the plant can be allowed to grow out of the water, but the leaf margins often dry out if air humidity is low.



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O DIFFICULT





size depends on the light intensity, and in poor light it is quite a small plant. It looks best in small groups. Echinodorus parviflorus 'Tropica' was named after Tropica in 1985 by the Danish botanists Niels Jacobsen

PRICE GROUP: POT 8



FAMILY:	Alismataceae
ORIGIN:	Cultivar
HEIGHT:	5 - 15 cm
WIDTH:	12 - 20 cm
TEMPERATURE:	21 - 28°C
GH:	4 - 20 dH
pH:	5.5 - 8
CODE:	Е

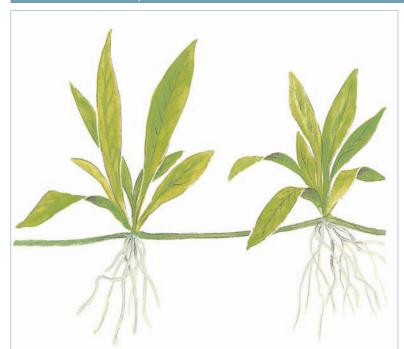
LIGHT:	LOW	O ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Echinodorus quadricostatus

and Lauritz Holm-Nielsen.

068



This plant has characteristic light-green leaves which form a good contrast to the darker aquarium plants. It is most beautiful when planted in groups. In good conditions it produces runners which spread over the bottom. Growth is more compact when planted in a pot or between stones or other objects. Very light leaves are a sign of a shortage of micro-nutrients. There is some confusion about the name of this plant, and it has been sold as *Echinodorus bolivianus* var. *magdalenensis*.



	FAMILY:	Alismataceae
	ORIGIN:	Central/South America
	HEIGHT:	10 - 15 cm
9	WIDTH:	15 - 20+ cm
	TEMPERATURE:	20 - 28°C
	GH:	1 - 20 dH
	pH:	6 - 9
	CODE:	Е

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Echinodorus 'Red Diamond'



Echinodorus 'Red Diamond' appeared as a culture in the Ukraine, and is probably a cross between Echinodorus horemanni 'red' and Echinodorus x barthii. The resultant hybrid is an attractive plant with ruby-red sword-shaped leaves. Unlike many of the other Echinodorus-species, Echinodorus 'Red Diamond' remains moderate in size, so it is extremely well suited as a solitary plant, even in small aquariums. Increasing the nutrients in the substrate results in more abundant growth, while favourable light conditions promote the formation of the ruby-red leaves.

PRICE GROUP: POT 8



FAMILY:	Alismataceae
ORIGIN:	Cultivar
HEIGHT:	15 - 25 cm
WIDTH:	20 - 30 cm
TEMPERATURE:	15 - 30°C
GH:	4 - 30 dH
pH:	6 - 8
CODE:	Е
	ORIGIN: HEIGHT: WIDTH: TEMPERATURE: GH: pH:

LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	O O O DIFF	FICULT



Echinodorus 'Red Flame'

073H



A beautiful variety of *Echinodorus* 'Ozelot', cultivated at the Hans Barth Dessau aquarium plant nursery in Germany. 'Red Flame' has intense dark red spots on reddish brown leaves. The oldest leaves gradually turn a more mossy, shiny green. An undemanding and decorative solitary plant, growing most abundantly on a nutritious bottom. See also *Echinodorus* 'Ozelot'.

PRICE GROUP: POT 10 XL 11



	FAMILY:	Alismataceae
	ORIGIN:	Cultivar
	HEIGHT:	10 - 30 cm
	WIDTH:	10 - 20 cm
	TEMPERATURE:	20 - 30°C
	GH:	1 - 30 dH
	pH:	5 - 8
	CODE:	Е

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Echinodorus 'Red Special'



A hybrid of several different cultivated plants, characterised by copper-coloured, spatula-shaped leaves. In some cases these have darker red patches. The plant grows abundantly in a compact shape, and is very decorative as a solitary plant.

PRICE GROUP: POT 9 XL 11



LIGHT:	LOW	$\bigcirc \bullet \bullet \bullet \bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	• O O O DIF	FICULT



Echinodorus 'Rosé'

072B



This beautiful plant is a hybrid between *Echinodorus horemanii* "Rot" and *Echinodorus horizontalis*. It was first produced in 1986 by Hans Barth in Dessau. New underwater leaves are a beautiful pink, and initially the leaves have red-brown spots. A nutritious bottom promotes growth, but otherwise *Echinodorus* 'Rosé' is undemanding and thus an excellent plant for beginners.

PRICE GROUP: POT 8 XL 11



FAMILY: Alismataceae

ORIGIN: Cultivar

HEIGHT: 25 - 40 cm

WIDTH: 15 - 25 cm

TEMPERATURE: 20 - 30°C

GH: 4 - 20 dH

pH: 5.5 - 8

CODE: E

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



DID YOU KNOW: Time spent out of water provides strength for life under water

In the wild nine out of ten tropical aquarium plants are capable of surviving both above and below the water surface. They are known as amphibious plants – plants which can adapt to long dry periods above water when the water level in rivers and streams drops. They actually make use of the time with the sun shining on the damp, nutritious soil which once was a river bed, gathering strength for the underwater existence which will follow when the rainy season returns. The lengths of time the plants spend above and below water can vary considerably, but the pattern is always the same. Many plants are transformed to help them take the greatest possible advantage of conditions in the open air. Some develop completely new leaf shapes and colours, so that they can make the best of the light. Many of them flower and seed. Most of them develop new side shoots, which not only ensure further propagation, but also that a greater reserve of nutrition is built up for the time under water.

Plants with improved adaptability

Some people claim that all aquarium plants should be cultivated under water. But at Tropica we have discovered that plants that are amphibious in the wild adapt more quickly and easily to conditions in an aquarium if they are cultivated above water. At Tropica we simulate the conditions prevailing in the tropical dry season throughout the growth of the plant. Only the roots are under water - planted in mineral wool in pots. The temperature and humidity in the greenhouses are controlled electronically so the climate is identical to that of a tropical rain forest, and powerful artificial light is provided above our growing tables to compensate for the short daylight hours in Scandinavia from September to March. The plants gather their strength and energy prior to spending a period under water just as they do in the wild. The light conditions, water hardness, pH value and EC value are rarely identical from one aquarium to the next. But a Tropica plant cultivated in emersed conditions always has the reserves and surplus energy needed to develop new leaves capable of flourishing in its new environment. If the same plant is cultivated under water it adapts to the water conditions prevailing in the nursery. It does not build up special reserves because it is already under water, so it finds it harder to adapt to a new aquatic environment.



20 - 40 cm



Echinodorus 'Rubin' is a decorative hybrid between Echinodorus horemanii ''rot" and Echinodorus x barthii. The transparent, ruby-red leaves with light leaf ribs provide a particularly intensive sheen. An undemanding plant whose growth is stimulated by CO_2 addition and a nutritious bottom. A good solitary plant for large aquariums.

PRICE GROUP: POT 9 XL 13

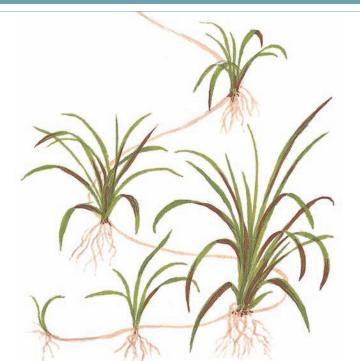


LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Echinodorus tenellus

067



Small foreground plants for aquariums are in short supply, but Echinodorus tenellus is one of the best. The runners spread round the aquarium, and growth is more compact when planted in a pot or between stones or other objects. A true "lawn" effect is only achieved at high light intensities, so you must make sure larger plants do not overshadow the plant. Plant individual plants a couple of centimetres apart (easiest with tweezers). A nutritious bottom promotes growth.



FAMILY:	Alismataceae
ORIGIN:	America
HEIGHT:	5 - 10 cm
WIDTH:	5 - 8+ cm
TEMPERATURE:	19 - 30°C
GH:	1 - 13 dH
pH:	5.5 - 8
CODE:	1

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O FAST
DEMANDS:	EASY	O O O DIFFICULT



058

Echinodorus uruguayensis



Echinodorus uruguayensis has long, narrow, transparent, dark-green leaves, making it a very beautiful solitary plant for large aquariums. The leaf length and width vary considerably. In good growing conditions it forms an unusual number of leaves, and a nutritious bottom and ${\rm CO_2}$ addition and slightly acidic water promote growth. A number of species formerly regarded as distinct are now included under the name Echinodorus uruguayensis.

PRICE GROUP: POT 7

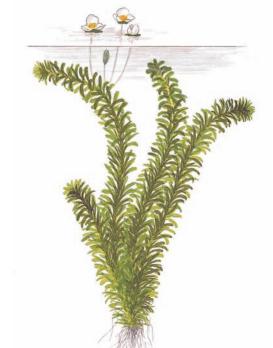


FAMILY:	Alismataceae
ORIGIN:	South America
HEIGHT:	20 - 55+ cm
WIDTH:	10 - 30 cm
TEMPERATURE:	15 - 26°C
GH:	4 - 20 dH
pH:	5 - 8
CODE:	Е

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Egeria densa



Egeria densa is a good plant for beginners, and its rapid growth helps create a balance in the aquarium from the start. It can also help prevent algae because it absorbs a great number of nutrients from the water. The plant secretes antibiotic substances which can help prevent blue-green algae (a type of bacteria). The growth rate depends largely on the amount of light and nutrition available. Growth does not stop in unfavourable conditions, but the plant turns light in colour and the tendrils grow thin.

PRICE GROUP: BDT 3



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Eleocharis parvula



quite close to each other, which will gradually form a solid mass of plants. It is pretiest planted in small outches quite close to each other, which will gradually form a solid mass of plants. An ideal foreground plant, equally suited to large and small aquariums. Its scientific name is at present uncertain.

PRICE GROUP: POT 7

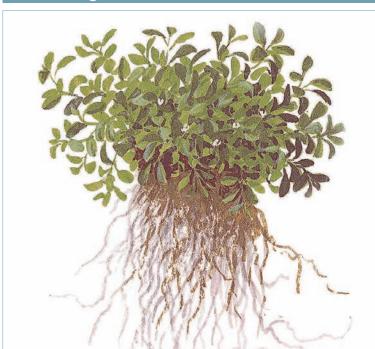


LIGHT:	LOW	\bigcirc • • • •	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY		IFFICULT



Glossostigma elatinoides

045A



Glossostigma elatinoides is much in demand in Japanese-inspired aquariums. It is one of the smallest aquarium plants, and thus a good foreground plant. A difficult plant demanding a lot of light. Grows upwards if light is poor. Make sure larger plants do not overshadow it. When planting in the aquarium small clumps (approx. 1/8 pot) should be placed at intervals of a few centimetres to help the plants grow together more quickly. CO₂ addition and soft water promote growth significantly.



FAMILY:	Scrophulariaceae
ORIGIN:	New Zealand
HEIGHT:	2 - 3+ cm
WIDTH:	3+ cm
TEMPERATURE:	15 - 26°C
GH:	1 - 13 dH
pH:	5 - 7.5
CODE:	G

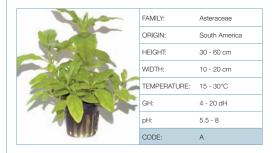
LIGHT:	LOW	$\circ \circ \circ \bullet \bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	0000	DIFFICULT





In the wild Gymnocoronis spilanthoides is generally found as a marsh plant, but it is very suitable for aquariums. It grows fast and makes few demands, but it does require a lot of light. With its light-green foliage, a group of Gymnocoronis spilanthoides forms a good contrast to the other aquarium plants. The high growth rate can help prevent algae because the plant absorbs a great number of nutrients from the water. Easy to propagate by side shoots or cuttings, which should be cut off and planted in the bottom.

PRICE GROUP: POT 5



LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\circ \circ \circ \circ \bullet$	FAST
DEMANDS:	EASY	$\circ \bullet \circ \circ \circ$	DIFFICULT



Hemianthus callitrichoides "Cuba"

048B



Hemianthus callitrichoides is one of the smallest aquarium plants in the world, and creeps over the bottom with millimetre-sized round leaves. If planted in small clumps a few centimetres apart, it will spread rapidly and cover the bottom like a carpet. Hemianthus callitrichoides is an attractive foreground plant for small aquariums, and makes few demands. Found on Cuba west of Havana.

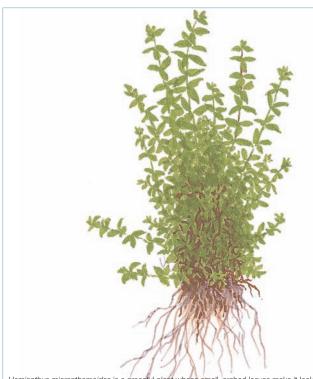


FAMILY:	Scrophulariaceae
ORIGIN:	Cuba
HEIGHT:	0,5 - 3 cm
WIDTH:	3 - 10+ cm
TEMPERATURE:	18 - 28°C
GH:	1 - 20 dH
pH:	5 - 7.5
CODE:	G

LIGHT:	LOW	O • • • HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O DIFFICULT



Hemianthus micranthemoides



Hemianthus micranthemoides is a graceful plant whose small, arched leaves make it look like a miniature version of Egeria. It has a characteristic trailing growth in intensive light, so it can be used as a foreground plant. A compact group of Hemianthus micranthemoides is very beautiful with its small, light-green leaves. In terrariums the plant forms a compact cushion. Used to be called Micranthemum micranthemoides.

PRICE GROUP: POT 7



LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Heteranthera zosterifolia

096

Pontederiaceae

South America

O O O DIFFICULT



becomes so compact that no light reaches the lower leaves. Water roots often form on the stem. In open

aquariums it forms small blue flowers if some shoots are allowed to spread on the surface.



FAMILY:

ORIGIN:

PRICE GROUP: POT 7

DEMANDS





Hydrocotyle sibthorpioides is a beautiful plant which can unfortunately be very difficult to grow. Intensive light is vital. In the wild it is found in very arid conditions which are rarely flooded. Used to be sold as Hydrocotyle 'maritima".

PRICE GROUP: POT 5



FAMILY:	Apiaceae
ORIGIN:	Southeast Asia
HEIGHT:	3 - 8 cm
WIDTH:	5+ cm
TEMPERATURE:	20 - 28°C
GH:	1 - 13 dH
pH:	6 - 8
CODE:	1

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Hydrocotyle verticillata

039



Unlike other *Hydrocotyle*-species, this plant retains its trailing growth form. Optimum growth is only achieved in strong light and soft, slightly acidic water. It does not need to be rooted, but can be used as a floating plant. *Hydrocotyle verticillata* is definitely a foreground plant which can also be used in garden ponds. It can also be used as an indoor plant if the soil is kept moist.



FAMILY:	Apiaceae
ORIGIN:	South America
HEIGHT:	3 - 7 cm
WIDTH:	5+ cm
TEMPERATURE:	10 - 26°C
GH:	1 - 13 dH
pH:	5 - 8
CODE:	1

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O DIFFICULT



Hygrophila corymbosa 'Angustifolia'



PRICE GROUP: POT 5 XL 9



FAMILY:	Acanthaceae
ORIGIN:	Southeast Asia
HEIGHT:	25 - 60 cm
WIDTH:	20 - 35 cm
TEMPERATURE:	20 - 30°C
GH:	1 - 20 dH
pH:	5.5 - 8
CODE:	A
	ORIGIN: HEIGHT: WIDTH: TEMPERATURE: GH: pH:

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT

Hygrophila corymbosa "Compact"

052D



A very compact variety of *Hygrophila corymbosa*, with the leaves set close to the stalk. Forms numerous side shoots, enhancing the compact appearance. The leaves are a dark brownish green when the plant is delivered, but after a transitional period in the aquarium they turn light green and silver-white on the underside. In strong light the newest leaves are reddish brown in colour and in time the oldest ones die away - especially in dimmer light. New side shoots form often, to replace the old.



FAMILY:	Acanthaceae
ORIGIN:	Cultivar
HEIGHT:	5 -15 cm
WIDTH:	5 - 10 cm
TEMPERATURE:	18 - 30°C
GH:	1 - 30 dH
pH:	5 - 8
CODE:	А

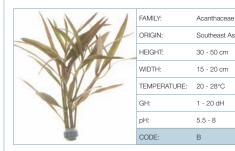
LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





An undemanding plant for large aquariums, which thrives in almost any conditions. If it is not pruned it easily grows above the water surface. This makes it particularly suitable for open aquariums. It is most beautiful in groups, but the shoots must not be planted too close, because this will prevent light reaching the lower leaves.

PRICE GROUP: BDT 3



LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	00000	OIFFICULT



Hygrophila corymbosa 'Siamensis'

053A



Under water the leaves are light-green and dense. In open aquariums *Hygrophila corymbosa* 'Siamensis' grows easily above the water surface, where it forms blue-green leaves and small blue flowers. It grows fast and the shoots must be pinched out regularly if you want to keep the plant under water. An extremely hardy plant, suitable for beginners.

PRICE GROUP: POT 4 X

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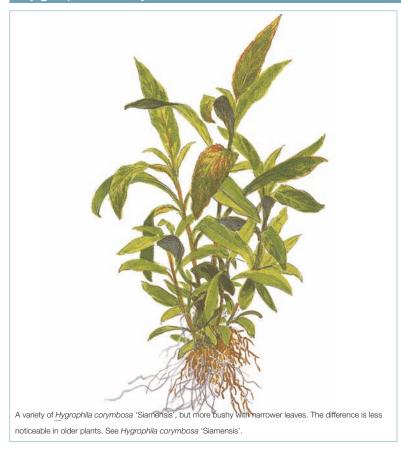


FAMILY:	Acanthaceae
ORIGIN:	Southeast Asia
HEIGHT:	15 - 40 cm
WIDTH:	15 - 20 cm
TEMPERATURE:	20 - 28°C
GH:	1 - 20 dH
pH:	5.5 - 8
CODE:	A

LIGHT:	LOW	\bigcirc	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	$\bigcirc \bullet \bigcirc \bigcirc \bigcirc$	DIFFICULT



053B



PRICE GROUP: POT 4



LIGHT:	LOW	\bigcirc • • • •	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY		IFFICULT



Hygrophila difformis

051



Hygrophila difformis is beautiful and undemanding. A plant for beginners which can help create a balance in the aquarium from the start. Its rapid growth helps prevent algae because the plant absorbs a great number of nutrients from the water. The shortage of micro-nutrients leads to pale leaves, which may be an indication that the aquarium needs fertiliser. In large aquariums its lobed leaves can create a distinctive group.



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT

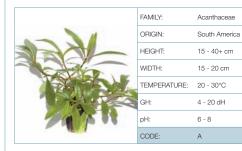


Hygrophila guianensis



With its large, long leaves $Hygrophila\ guianensis$ is most suitable for planting in groups in large aquariums. It is demanding in terms of light, and thrives best when CO_2 is added and the bottom is nutritious. If it is not pruned it easily grows above the water surface, which makes it suitable for open aquariums.

PRICE GROUP: POT 4



LIGHT:	LOW	O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Hygrophila polysperma

050



Hygrophila polysperma is one of the hardiest aquarium plants available. It is particularly good for beginners because it grows in almost all conditions. It normally grows so fast that it is important to prevent it crowding out other plants. The shoots must be pinched out regularly. Leaves lying on the surface form small new plants. Hygrophila polysperma varies considerably in leaf shape and colour, depending to some extent on the light supplied.



FAMILY:	Acanthaceae
ORIGIN:	Southeast Asia
HEIGHT:	25 - 40 cm
WIDTH:	10 - 20 cm
TEMPERATURE:	18 - 30°C
GH:	4 - 30 dH
pH:	5 - 9
CODE:	А

LIGHT:	LOW	\bigcirc	HIGH
GROWTH RATE:	SLOW	$\circ \circ \circ \circ \bullet$	FAST
DEMANDS:	EASY	\bullet	DIFFICULT





DID YOU KNOW: Tropica AquaDecor - plants on roots and stone.

Tropicas AquaDecor series of plants on lavastone and tree root are plants that from the beginning are grown directly on the lava stone or tree root . Most AquaDecor products are 6-9 months old before they leave our nursery. A Tropica AquaDecor product is hence very hardy since the plants roots have grown on to the stone, tree root or coconut shell - hereby ensuring a healthy product with numerous decoration possiblities for the aquarist to enjoy.



050A



Variety of Hygrophila polysperma generally larger than the normal plant. When it grows too large, pinch off the stalk and plant it on the bottom again. Larger plants will often send roots out into the water under the lowest leaves, providing a favourite hiding place for young fish. See also Hygrophila polysperma.

PRICE GROUP: POT 5



FAMILY:	Acanthaceae
ORIGIN:	Southeast Asia
HEIGHT:	10 - 50 cm
WIDTH:	10 - 15 cm
TEMPERATURE:	18 - 28°C
GH:	1 - 30 dH
pH:	5 - 8
CODE:	А

LIGHT:	LOW	$\bigcirc \bullet \bullet \bullet \bullet$	HIGH
GROWTH RATE:	SLOW	000•0	FAST
DEMANDS:	EASY	•0000	DIFFICULT



Hygrophila polysperma 'Rosanervig'

050B



Hygrophila polysperma 'Rosanervig' is normally an undemanding plant. But if you want deep-pink leaves you must provide intensive light. The distinctive colouring of the light leaf ribs is probably caused by a virus which prevents chlorophyll from being produced in the cells around the leaf ribs, making them white. However, this virus does not affect other plants in the aquarium.



FAMILY:	Acanthaceae
ORIGIN:	Cultivar
HEIGHT:	20 - 30+ cm
WIDTH:	6 - 10 cm
TEMPERATURE:	18 - 28°C
GH:	4 - 20 dH
pH:	5 - 8
CODE:	А

LIGHT:	LOW	00000	HIGH
GROWTH RATE:	SLOW	00000	FAST
DEMANDS:	EASY	00000	DIFFICULT

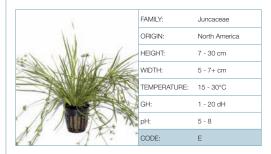


Juncus repens 133F



Juncus repens is widespread in shallow water and along the banks of ponds and lakes in North America. In an aquarium Juncus repens is decorative and distinguishes itself from other aquatic plants. If it grows under water, Juncus repens forms leaves in rings, and, depending on its growth conditions, it often develops a thick, bushy habit. The leaves are normally light green, but in good light the underwater form of Juncus repens most frequently becomes reddish. New shoots form willingly from the nodes, so Juncus repens is easy to propagate.

PRICE GROUP: POT 8

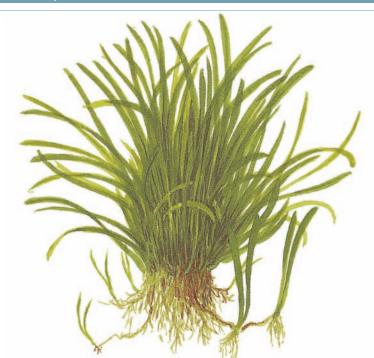


LIGHT:	LOW	O ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Lilaeopsis brasiliensis

040



Lilaeopsis brasiliensis can grow very compact, but a "lawn effect" is only achieved at high light intensity. When planting in the aquarium small clumps (approx. 1/8 pot) should be placed a few centimetres apart to help the plants grow together more quickly. Place in an open position without shading from other plants to ensure good light. Lilaeopsis brasiliensis can be used in garden ponds, and also tolerates low salt concentrations in brackish aquariums.



FAMILY:	Apiaceae
ORIGIN:	South America
HEIGHT:	4 - 7 cm
WIDTH:	5+ cm
TEMPERATURE:	15 - 26°C
GH:	1 - 20 dH
pH:	6 - 8
CODE:	1

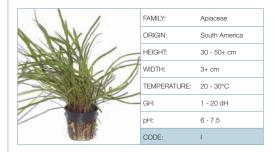
LIGHT:	LOW	O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





This species of Lilaeopsis requires less light and grows a good deal higher than the other Lilaeopsis-species Runners from Lilaeopsis macloviana creep across the bottom, and vertical branches grow up from the runners. Its habit is similar to Vallisneria, and it is fast growing and easy to care for Lilaeopsis macloviana grows in a wide variety of habitats, from the Pampas in the Andes where it was found to river mouths and brackish beach meadows, indicating how adaptable this plant is. Thus it tolerates low salt concentrations in a brackish water aquarium.

PRICE GROUP: POT 7

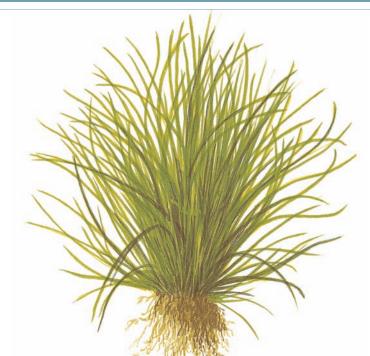


LIGHT:	LOW	\bigcirc • • • •	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	○ ● ○ ○ ○ DIF	FICULT



Lilaeopsis mauritiana

040B



This Lilaeopsis-species demands less light than Lilaeopsis brasiliensis. Tropica's founder, Holger Windelov, found it on Mauritius in 1992. The plant's height and distance between its leaves depend on the light intensity. The more light it gets, the lower the plant and the denser the leaves. The runners spread round the aquarium, and growth is more compact when planted in a pot or between stones or other objects. Should be planted like Lilaeopsis brasiliensis.



	FAMILY:	Apiaceae
	ORIGIN:	Africa
	HEIGHT:	5 - 10 cm
	WIDTH:	3+ cm
	TEMPERATURE:	15 - 28°C
	GH:	1 - 30 dH
	pH:	5.5 - 8
	CODE:	T

LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Limnobium laevigatum



in traditional aquariums, because the fine, long and decorative roots provide protection to gouramies and other surface fish that like the roots of floating plants. If there are enough nutrients in the water and the light

PRICE GROUP: POR 6



LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Limnophila aquatica

intensity is good, new leaves will appear above the water surface.

046



An extremely beautiful aquarium plant circled by light-green and finely branched leaves. In the right growing conditions with added CO_2 and a nutritious bottom this plant grows fast. In good light it forms horizontal side shoots and becomes attractive and bushy. Most decorative when several stems are planted in a small group. In open aquariums it sometimes sends shoots above the water surface, forming small blue flowers.



FAMILY:	Scrophulariaceae
ORIGIN:	Southeast Asia
HEIGHT:	25 - 50 cm
WIDTH:	9 - 15 cm
TEMPERATURE:	20 - 30°C
GH:	1 - 13 dH
pH:	5 - 8
CODE:	А

LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	DIFFICULT





There are several varieties of this plant. The variety grown by Tropica is said to come from Malaysia. It is characterised by its narrow green leaves, which are purple underneath. Like most other red plants, the colour depends on a supply of intensive light. CO₂ addition promotes growth significantly, and it also thrives in hard water. *Limnophilla aromatica* is easy to propagate by cuttings.

PRICE GROUP: POT 7



	FAMILY:	Scrophulariaceae
	ORIGIN:	Southeast Asia
8	HEIGHT:	25 - 50 cm
F	WIDTH:	5 - 8 cm
	TEMPERATURE:	22 - 28°C
	GH:	1 - 13 dH
	pH:	5 - 7
	CODE:	А

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Limnophila sessiliflora

047



 $\label{limited_limit$

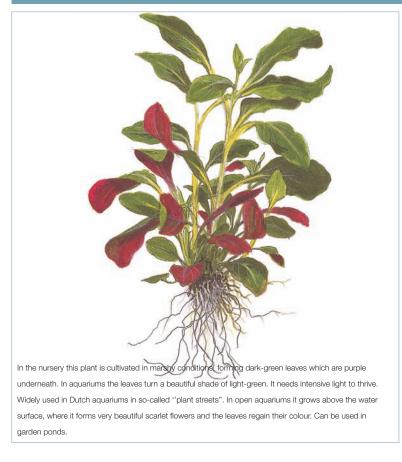


FAMILY:	Scrophulariaceae
ORIGIN:	Southeast Asia
HEIGHT:	15 - 40 cm
WIDTH:	4 - 7 cm
TEMPERATURE:	22 - 28°C
GH:	4 - 20 dH
pH:	5.5 - 8
CODE:	А

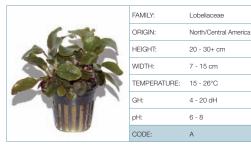
LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O DIFFICULT



Lobelia cardinalis 053C



PRICE GROUP: POT 5

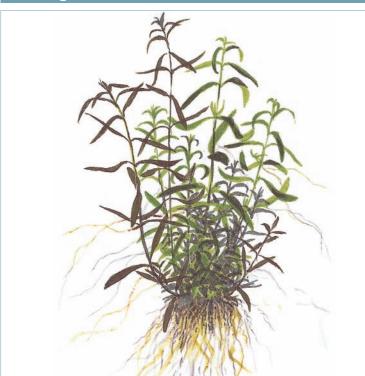


LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Ludwigia arcuata

035



This is a narrow-leafed *Ludwigia*-species, so it is often mistaken for *Didiplis diandra*. It requires a relatively large amount of light before forming a red stem and red leaves, and thrives best in slightly acidic, soft/ medium hard water. The most decorative effect can be achieved by planting it in groups. It is suitable for small aquariums, and can also be used as a terrarium plant.



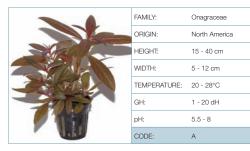
LIGHT:	LOW	00000	HIGH
GROWTH RATE:	SLOW	$\circ \circ \bullet \circ \circ$	FAST
DEMANDS:	EASY	0 • 0 0 DIF	FICULT





 $\label{local_local_local} \textit{Ludwigia glandulosa} \ \text{is a very beautiful water plant. It is slowgrowing and requires CO}_2 \ \text{addition to grow well.}$ The leaves turn greener if sufficient light is provided. Used to be sold as Ludwigia perennis.

PRICE GROUP: POT 5 XL 9



LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Ludwigia inclinata var. verticillata "Cuba"

035C



Ludwigia inclinata var. verticillata is cultivated in swamps, where it has green oval leaves, but after a transitional period under water in the aquarium it develops long, narrow leaves, growing closely together to give a compact appearance. These new leaves are marbled with copper and reddish brown. The plant is found on the Isla de la Juventud off Cuba.



FAMILY:	Onagraceae
ORIGIN:	Cuba
HEIGHT:	10 - 30 cm
WIDTH:	10 - 15 cm
TEMPERATURE:	18 - 28°C
GH:	1 - 13 dH
pH:	5 - 7.5
CODE:	А

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O DIFFICULT





Ludwigia repens is a familiar and very beautiful aquarium plant. It generally makes few demands and grows fast, but the red colour is more intense if the light is good. When pruned it develops countless side shoots and becomes more bushy. Suitable as an intermediate or background plant, and most effective when planted in groups.

PRICE GROUP: POT 7



LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Ludwigia repens 'Rubin

033D



Variety of *Ludwigia repens* with striking dark red leaves and stalk. It makes a fine colour contrast to the green shades in the aquarium. Plant in large groups to enhance the decorative effect, and prune regularly to encourage bushy growth. The plant makes few demands, but if light is insufficient the lower leaves tend to fall off. In strong light the colour becomes more intense. Its scientific name is at present uncertain. See also *Ludwigia repens*.



LIGHT:	LOW	O • • • HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





Lysimachia nummularia 'Aurea'



Lysimachia nummularia 'Aurea' is a beautiful variety of Lysimachia nummularia, whose golden colour can form a good contrast to the other plants in an aquarium. It requires good light but makes no other demands. It is most decorative when planted in small groups.

PRICE GROUP: POT 5



Е	AMILY:	Primulaceae
C	RIGIN:	Cultivar
H	IEIGHT:	15 - 25 cm
٧	VIDTH:	5 - 15 cm
Т	EMPERATURE:	15 - 25°C
G	BH:	4 - 20 dH
р	H:	6 - 8
C	CODE:	A

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Marsilea hirsuta 010



Marsilea hirsuta is a fascinating plant, usually delivered with leaves like a four-leaf clover. After a transitional period it develops different types of leaves, possibly a low form with single leaves like a large Glossostigma, or alternatively develop two, three or four-lobed leaves varying in height, depending on the growth conditions. Whichever form the plant adopts, it forms runners and spreads rapidly round the aquarium. The scientific name for this unusual aquatic fern has not yet been finally settled.

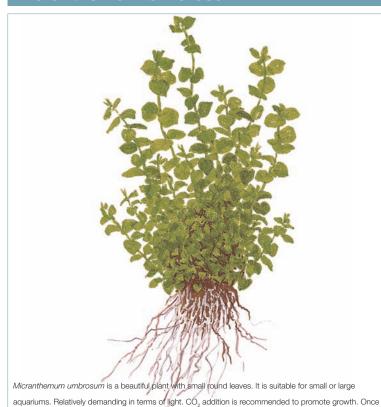


FAMILY:	Marsileceae
ORIGIN:	Australia
HEIGHT:	2 - 10+ cm
WIDTH:	5 - 20+ cm
TEMPERATURE:	18 - 28°C
GH:	1 - 20 dH
pH:	5 - 7.5
CODE:	Н

LIGHT:	LOW	● ● ● ○ HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Micranthemum umbrosum



the plant starts growing it grows fast, and the shoots have to be pinched out often (can be planted as

PRICE GROUP: POT 7



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



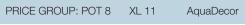
Microsorum pteropus

cuttings in the bottom). Most beautiful in groups of many stems.





Microsorum pteropus is a water fern which should be grown on a root or stone, attached with fishing line until it has gained a hold. If it is planted in the bottom, do not cover the rhizome because it will rot. Easy to propagate by splitting the horizontal rhizome. A hardy plant which grows in all conditions. The black spots under the leaves are sporangia (reproductive organs), not signs of disease as many believe.





FAMILY:	Polypodiaceae
ORIGIN:	Asia
HEIGHT:	15 - 30 cm
WIDTH:	12 - 20+ cm
TEMPERATURE:	18 - 30°C
GH:	1 - 20 dH
pH:	5 - 8
CODE:	D

LIGHT:	LOW	$\bullet \bullet \bullet \bullet \bigcirc$	HIGH
GROWTH RATE:	SLOW	$\circ \bullet \circ \circ \circ$	FAST
DEMANDS:	EASY	•0000	DIFFICULT



008A



PRICE GROUP: POT 8 AquaDecor FAMILY: Polypodiaceae ORIGIN: Asia HEIGHT: 10 - 20 cm WIDTH: 10 - 20 cm TEMPERATURE: 18 - 30°C GH: 1 - 30 dH pH: 5 - 8 CODE: D

LIGHT:	LOW	● ● ● ○ HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Microsorum pteropus 'Philippine'

008D

10 - 30 cm

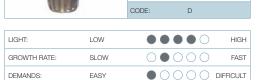
10 - 20 cm

18 - 30°C 1 - 30 dH 5 - 8



Variety of *Microsorum pteropus* with strikingly beautiful long, slender 'hammered out' leaves. *Microsorum pteropus* 'Philippine' grows readily on roots and stones, but can also be planted directly on the bottom - but not too deep. The plant is hardy and also suitable for larger aquariums. It is tolerant of salt, and originated from the island of Panay in the Philippines, where it grows right out in the tidal river mouth and thrives both below and above water. See also *Microsorum pteropus*.





HEIGHT:

WIDTH:

TEMPERATURE:



Microsorum pteropus 'Windeløv' ®

008B



Microsorum pteropus 'Windeløv' is a patented variety of Microsorum pteropus, named after Tropica's founder Holger Windeløv. Its finely branched leaf tips make it one of the most beautiful aquarium plants. A hardy and easy plant for both beginners and the more experienced. Best results are obtained by planting it on a stone or tree root. If planted in the bottom the horizontal rhizome must not be covered. This plant is not eaten by herbivorous fish.

PRICE GROUP: POT 9 XL 11 AquaDecor



	FAMILY:	Polypodiaceae
×.	ORIGIN:	Cultivar
4	HEIGHT:	10 - 20 cm
	WIDTH:	12 - 18+ cm
	TEMPERATURE:	18 - 30°C
	GH:	1 - 20 dH
	pH:	5 - 8
	CODE:	D

LIGHT:	LOW	● ● ● ○ HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Monosolenium tenerum

002C



Monosolenium tenerum is an attractive liverwort, which looks most like a giant Riccia that simply stays at the bottom, where it forms cushions. It is a brittle plant, and pieces break off easily, so it is best to place it in the aquarium attached to stones with fishing line or in small clumps among other plants such as Eleocharis. Once Monosolenium tenerum has established itself, it is very undemanding. This plant is mistakenly known as Pellia.

PRICE GROUP: POR 7 AquaDecor



FAMILY:	Monoseleniaceae
ORIGIN:	Asia
HEIGHT:	2 - 5+ cm
WIDTH:	3 - 10+ cm
TEMPERATURE:	5 - 28°C
GH:	1 - 30 dH
pH:	5 - 8
CODE:	К

LIGHT:	LOW	••••	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	$0 \bullet 0 0 0$	DIFFICULT



Nesaea crassicaulis



Nesaea crassicaulis is a beautiful and highly recommended aquarium plant, although it has high demands for light. It has red-brown, cognac-coloured leaves. Grows best in soft and slightly acidic water. Make sure the lower leaves get sufficient light, otherwise they will die off. This plant is similar to Ammannia-species and is often mistaken for them. But in the aquarium it can be recognised by its yellow-green stems. Easy to propagate by side shoots or cuttings, which can be cut off and planted in the bottom.

PRICE GROUP: POT 5



FAMILY:	Lythraceae
ORIGIN:	Africa
HEIGHT:	30 - 50 cm
WIDTH:	8+ cm
TEMPERATURE:	22 - 28°C
GH:	1 - 13 dH
pH:	5.5 - 8.5
CODE:	A

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Nesaea pedicellata

033C



Nesaea pedicellata is an attractive, decorative and easy stem plant. Leaf colours range from green to yellow and orange and reddish shades depending on growth conditions in the aquarium. The stems keep their intense red colouring, something that can also be seen when the plant is grown in a swamp. Compared with Nesaea crassicaulis (Tropica no. 033B), Nesaea pedicellata has narrower leaves and its colours are warmer. We recommend planting Nesaea in the mid-ground of the aquarium as a contrast to the tall green background plants. Fertilizer capsules should be used to strengthen the plant and emphasise its colours.



FAMILY:	Lythraceae
ORIGIN:	Africa
HEIGHT:	20 - 40+ cm
WIDTH:	10 - 20+ cm
TEMPERATURE:	22 - 30°C
GH:	4 - 20 dH
pH:	5.5 - 8
CODE:	А

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Nymphaea lotus (zenkeri)



A beautiful and very varied species with leaves of green to red-brown and varying numbers of purple spots. Before forming floating leaves *Nymphaea lotus (zenkeri)* forms many underwater leaves. If you don't want floating leaves, prune the roots and leaves. The beautiful, aromatic flowers can be fully appreciated in open aquariums. A nutritious bottom encourages growth. Often available in a red and a green variety. Recommended as a solitary plant for large aquariums.

PRICE GROUP: POT 9 KN 7



FAMILY:	Nymphaeaceae
ORIGIN:	West Africa
HEIGHT:	20 - 80 cm
WIDTH:	25 - 60 cm
TEMPERATURE:	22 - 30°C
GH:	1 - 20 dH
pH:	5 - 8
CODE:	С

LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Phyllanthus fluitans

028



This plant belongs to the spurge family, which actually consists primarily of desert plants. But over thousands of years *Phyllanthus fluitans* has adapted to an entirely different environment. Like other floating plants it is most suitable for open aquariums, where it develops beautiful red leaves at high light intensities. If growth is good the plant needs thinning to prevent it overshadowing plants on the bottom.



FAMILY:	Euphorbiaceae
ORIGIN:	South America
HEIGHT:	1+ cm
WIDTH:	5+ cm
TEMPERATURE:	20 - 31°C
GH:	1 - 13 dH
pH:	5.5 - 8
CODE:	J

LIGHT:	LOW	O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





This plant was discovered by aquarists in Thailand, close to the border with Burma. It is called 'Daonoi' (little star) in Thailand, and it is easy to see why. *Pogostemon helleri* is an unusual and distinctive aquatic plant with a compact habit, curly leaves and a strikingly beautiful green colour. With good light conditions and a substrate rich in nutrients *Pogostemon helferi* forms many side shoots, which develop small roots, and the plant rapidly forms an impressive carpet of foreground vegetation. It important to note, however, that herbivorous fish appreciate this plant as much as aquarists do.

PRICE GROUP: POT 8 AquaDecor



FAMILY:	Lamiaceae
ORIGIN:	Southeast Asia
HEIGHT:	2 - 10 cm
WIDTH:	5 - 10 cm
TEMPERATURE:	20 - 30°C
GH:	1 - 30 dH
pH:	6 - 7.5
CODE:	A

LIGHT:	LOW	O ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Pogostemon stellata (Eusteralis)

053G



Pogostemon stellata is distinguished by its beautiful shape and colour. It is difficult to grow in aquariums. It requires intensive light and the addition of CO_2 to grow well. The shortage of micro-nutrients leads to pale leaves, which may be an indication that the aquarium needs fertiliser. Even in good conditions growth sometimes stops suddenly. Plants in aquarium shops are generally low, compact plants grown in marshy conditions, and do not reveal their full glory until planted in the aquarium.



FAMILY:	Lamiaceae
ORIGIN:	Asia
HEIGHT:	15 - 25 cm
WIDTH:	10 - 20 cm
TEMPERATURE:	22 - 28°C
GH:	1 - 13 dH
pH:	5 - 7
CODE:	А

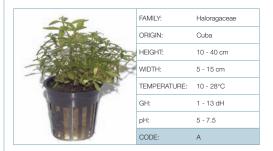
LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	0000	DIFFICULT





Cultivated above water and delivered with saw-toothed leaves, which after a transitional period in the aquarium develop into long, finely denticulated, needle-like leaves. In good light conditions it turns a beautiful copper colour and its characteristic appearance is a pleasing contrast to the other plants. Making few demands, *Proserpinaca palustris* varies in form according to its origin. The Tropica cultivar is found on the Isla de la Juventud off Cuba. In the USA the plant is commonly known as "mermaid weed".

PRICE GROUP: POT 8



LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	$\circ \bullet \circ \circ \circ$	FAST
DEMANDS:	EASY	00000	DIFFICULT



Riccardia graeffei

003D



Riccardia graeffei has previously been sold as 003N "various mosses" but now, this liverwort has been positively identified. Riccardia graeffei is a moss speciality on driftwood that has obtained huge popularity in Japan. Its growth form is quite similar to Monosolenium tenerum but it is a lot smaller. Riccardia graeffei is slow growing and difficult, and algae-eating fishes are disturbing its growth even if they are not directly eating the moss itself. When using CO₂, the moss will grow into a spectacular cushion in the aquarium but it needs regular trimming in order to maintain its beauty. It seems that there is some confusion related to its common name but "Coral Pellia" and "Mini Pellia" seem to be among the more popular names for Riccardia graeffei.

PRICE GROUP: AquaDecor



FAMILY:	Ricciaceae
ORIGIN:	Asia
HEIGHT:	1 - 3 cm
WIDTH:	3 - 5+ cm
TEMPERATURE:	15 - 28°C
GH:	1 - 30 dH
pH:	5.5 - 9
CODE:	К

LIGHT:	LOW	● ● ● ● HIGH
GROWTH RATE:	SLOW	● ○ ○ ○ ○ FAST
DEMANDS:	EASY	O O O DIFFICULT



Riccia fluitans 001



Japanese Takashi Amano has inspired many aquarium owners to keep *Riccia fluitans* submerged. It can be kept down by tying it to a stone with a piece of fishing line, but new shoots always grow towards the surface, so it may be necessary to prune it with scissors. Under water *Riccia fluitans* thrives best with added CO₂ and in good growing conditions small oxygen bubbles form on the leaf tips. As a traditional floating plant offers good protection for young fish.

PRICE GROUP: POR 7 AquaDecor



		CODE:	К	
LIGHT:	LOW	0	•••	HIGH
GROWTH RATE:	SLOW	00	• 0 0	FAST
DEMANDS:	EAGV			DIEEICUIT

Ricciaceae

Cosmopolitan

0,5 - 1+ cm

5+ cm

10 - 28°C 1 - 20 dH 5 - 8



Riccia sp. 'Dwarf'

001A



 $Riccia\ sp.$ 'Dwarf', like Riccia, is a floating plant which can be anchored to stones or roots with fishing line to keep it down. When the plant grows well it develops into an unusual and attractive carpet. To prevent it from becoming detached and floating to the top, it should be pruned from time to time with scissors, and fastened down again occasionally. $Riccia\ sp.$ 'Dwarf' thrives best when CO_2 is supplied (see also $Riccia\ fluitans$). The origins of this plant are unknown.



FAMILY:	Ricciaceae
ORIGIN:	Asia
HEIGHT:	0,5 - 1+ cm
WIDTH:	3 - 5+ cm
TEMPERATURE:	15 - 28°C
GH:	1 - 13 dH
pH:	5.5 - 7.5
CODE:	К

LIGHT:	LOW	○ ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





PRICE GROUP: POT 5



FAMILY:	Lythraceae
ORIGIN:	Asia
HEIGHT:	40 - 50 cm
WIDTH:	3+ cm
TEMPERATURE:	18 - 30°C
GH:	1 - 20 dH
рН:	5 - 8
CODE:	A
	ORIGIN: HEIGHT: WIDTH: TEMPERATURE: GH: pH:

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Rotala sp. "Nanjenshan" (Mayaca)

032B



There is some uncertainty about the correct name of this plant. For some time it has been sold as Mayaca sellowiana, but actually this is Rotala sp. "Nanjenshan" (species unknown). It is a graceful plant with needleshaped leaves. It requires a relatively large amount of light, and CO_2 addition is recommended to promote growth. The most decorative effect is achieved by planting it in groups. Also suitable for small aquariums.



	FAMILY:	Lythraceae
	ORIGIN:	Southeast Asia
	HEIGHT:	10 - 15 cm
	WIDTH:	2 - 4+ cm
l l	TEMPERATURE:	20 - 30°C
á	GH:	1 - 20 dH
	pH:	5.5 - 8
	CODE:	А

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O DIFFICULT



Rotala rotundifolia 033



The Latin name means "the plant with the round leaves". But this only applies to the marsh variety, which has circular leaves. In aquariums Rotala rotundifolia has long, thin leaves. Unlike other Rotala-species it is relatively undernanding, although it needs good light to produce red leaves. It forms side shoots willingly, becoming compact and bushy. This also means that it is hard for light to reach the lower leaves, so the plant should be pruned frequently. Also known as Rotala indica.

PRICE GROUP: POT 5



LIGHT:	LOW	○ ○ ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



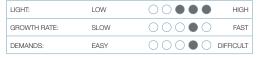
Rotala wallichii 032A



foreground plant, and suitable for small aquariums because it is easy to prune if it grows too large. ${\rm CO_2}$

addition boosts growth considerably. It also prefers soft, slightly acidic water.







Sagittaria platyphylla



Sagittaria platyphylla is an ideal foreground plant for large aquariums or in the middle of smaller aquariums. It forms a slightly dispersed group with its runners. A nutritious bottom promotes growth. If there is a shortage of micro-nutrients the plant turns pale, indicating that the aquarium may need fertiliser. This is a robust starter plant which is also suitable for the hard water that is found in many European aquariums.

PRICE GROUP: POT 7



FAMILY:	Alismataceae
ORIGIN:	North/Central America
HEIGHT:	15 - 40 cm
WIDTH:	10 - 25 cm
TEMPERATURE:	19 - 26°C
GH:	1 - 13 dH
pH:	5.5 - 8
CODE:	Е

LIGHT:	LOW	O ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Sagittaria subulata

079



Sagittaria subulata is an ideal, undemanding foreground plant whose short runners form a compact group. Place individual plants 2-4 cm apart. This plant may cause problems because in certain conditions it suddenly grows to a height of 50 cm when it grows older. But if it is then moved into the background it may become low again. In the aquarium it sometimes sends a long flower stem to the surface, and small white flowers unfold just above the water surface.

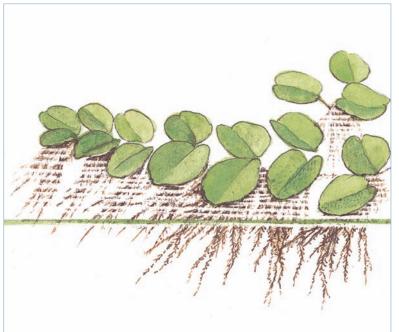


FAMILY:	Alismataceae
ORIGIN:	South America
HEIGHT:	5 - 30+ cm
WIDTH:	10 - 15 cm
TEMPERATURE:	16 - 28°C
GH:	4 - 30 dH
pH:	6 - 9
CODE:	Е

LIGHT:	LOW	○ ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Salvinia natans 011



Salvinia natans is a floating fern that grows quickly if there is sufficient nutrition and light. Light leaves are a sign of a shortage of micro-nutrients. It tends to take light from the plants at the bottom. Salvinia-varieties have small hairs on their leaves, making them water resistant. Helps prevent algae by shading parts of the aquarium and using nutrients in the water. Grows very big in the wild and in optimum conditions. A decorative plant for open aquariums.

PRICE GROUP: POR 6



FAMILY:	Alismataceae
ORIGIN:	Asia/Southern Europe
HEIGHT:	1 - 3 cm
WIDTH:	3+ cm
TEMPERATURE:	12 - 30°C
GH:	4 - 20 dH
pH:	5.5 - 9
CODE:	J

LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Samolus valerandi 026



In favourable light and nutrition conditions *Samolus valerandi* is a very beautiful foreground plant in the aquarium. It normally grows in marshes, and often takes time to adapt to life under water and start growing. If light conditions are good and the bottom is nutritious, the plant will do well. *Samolus valerandi* is also suitable as a pond or terrarium plant, as well as an indoor plant if placed in a north-facing window.

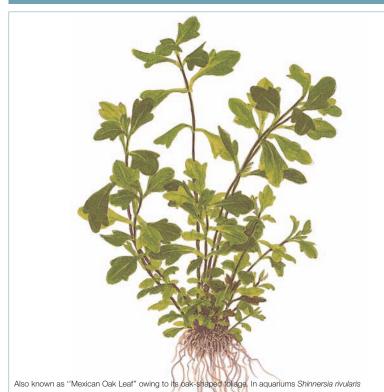


FAMILY:	Primulaceae
ORIGIN:	North America
HEIGHT:	6 - 12 cm
WIDTH:	6 - 12 cm
TEMPERATURE:	15 - 26°C
GH:	4 - 30 dH
pH:	6 - 9
CODE:	F

LIGHT:	LOW	O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Shinnersia rivularis 053D



probably grows faster than any other plant, although it is generally found as a marsh plant in the wild. The distance between leaves is great if the light is poor, and the length of the leaves depends directly on the light intensity. Easy to propagate by side shoots or cuttings, which should be cut off and planted in the bottom.

PRICE GROUP: POT 6



LIGHT:	LOW	$\bigcirc\bigcirc\bigcirc\bullet\bullet\bullet$	HIGH
GROWTH RATE:	SLOW	0000	FAST
DEMANDS:	EASY	0 • 0 0 0	DIFFICULT



Shinnersia rivularis 'Weiss-Grün'

053E



Variety of Shinnersia rivularis, distinguished by the white veins on the leaves. This colour mutation was discovered at the Dennerle aquarium plant nursery. The plant grows rapidly and soon reaches the water surface, but shoots can simply be pinched off and planted back on the bottom. See also Shinnersia rivularis.



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Taxiphyllum barbieri (Vesicularia)



Taxiphyllum barbieri is a hardy plant which makes few demands on the water or light. The moss grows willingly on any surface, so it is ideal for decorating stones and tree roots or concealing installations in the aquarium. Attach the plant with a piece of fishing line until it has gained a hold on the bottom. If its growth becomes too luxuriant, it can be pruned with scissors. In breeding aquariums Taxiphyllum barbieri is a wonderful hiding place for the young fish.

PRICE GROUP: POR 7 AquaDecor



FAMILY:	Hypnaceae
ORIGIN:	Southeast Asia
HEIGHT:	5+ cm
WIDTH:	5+ cm
TEMPERATURE:	15 - 28°C
GH:	1 - 30 dH
pH:	5 - 9
CODE:	K

LIGHT:	LOW	● ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Utricularia graminifolia

049B



Utricularia graminifolia belongs to the bladderwort-family. All the plants in this family are insect eating, perennial water and marsh plants. Bladder traps are a unique feature of this family, which Utricularia graminifolia forms after a short period of time in the aquarium. The species name means 'with grass like leaves' and the fresh green leaves after a short period of time form a pretty mat which looks like a lawn. Utricularia graminifolia is therefore an ideal foreground plant.



FAMILY:	Lentibulariaceae
ORIGIN:	Asia
HEIGHT:	2 - 5 cm
WIDTH:	5 - 8+ cm
TEMPERATURE:	16 - 28°C
GH:	4 - 20 dH
pH:	6 - 7.5
CODE:	1

LIGHT:	LOW	○ ● ● ○ HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Vallisneria americana (gigantea)



Vallisneria americana (gigantea) is an easy plant that grows fast, suitable for large aquariums. In most aquariums the leaves grow so long that they float on the surface. So the plant needs pruning to stop it taking too much light from plants growing beneath. The leaves are tough and strong, so they are not normally eaten by herbivorous fish. Vallisneria americana is easy to propagate using runners, which are prolific if the bottom is nutritious.

PRICE GROUP: POT 8 PL 5



LIGHT:	LOW	$\bigcirc \bullet \bullet \bullet \bullet$	HIGH
GROWTH RATE:	SLOW	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$	FAST
DEMANDS:	EASY	•0000	OIFFICULT



Vallisneria americana "mini twister"

056B

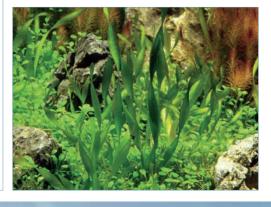


Vallisneria americana "mini twister" is yet another graceful variety of Vallisneria americana. "mini twister" is similar to Vallisneria americana var. biwaensis, but in a miniature version. "mini twister" develops short, attractively twisted leaves, and can thus be placed between foreground and background plants. "mini twister" is easy to grow and thrives even in less intensive light and without addition of CO₂ to the water.



FAMILY:	Hydrocharitaceae
ORIGIN:	Southeast Asia
HEIGHT:	10 - 15+ cm
WIDTH:	5 - 15 cm
TEMPERATURE:	20 - 28°C
GH:	4 - 20 dH
pH:	6 - 8.5
CODE:	1

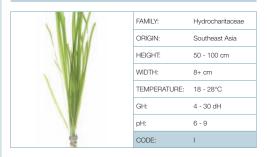
LIGHT:	LOW	○ ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT





Vallisneria americana (natans) is a hardy plant for beginners. The leaves do not grow very long, which also makes it suitable for small aquariums. It has fine, narrow leaves so it does not overshadow other plants much. Easy to propagate using its many runners.

PRICE GROUP: BDT 3



LIGHT:	LOW	O ● ● ● HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT



Vallisneria caulescens

056D



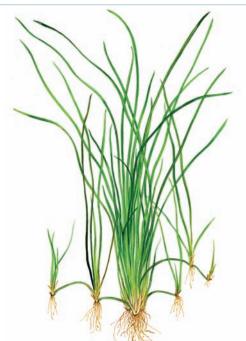
Vallisneria caulescens is a spectacularly decorative plant from northern Australia. Reddish structures towards the leaf tips and a central stripe through the leaves differentiate Vallisneria caulescens from the other, more familiar Vallisneria-species. In addition, Vallisneria caulescens forms side shoots from the stems over and above the ''normal" Vallisneria-leaves. Vallisneria caulescens requires a good deal of nutrition, and good growth conditions are a prerequisite for the development of the reddish structure of the leaves and the formation of offshoots.



LIGHT:	LOW	O O O O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT

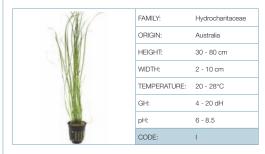


Vallisneria nana 056C



Vallisneria nana is a solitary contrast plant with dark green, rosulate, narrow leaves. It is extremely suitable as a mid-ground plant, but can also be used as a background plant in small aquariums. The leaves are much narrower than with other species of Vallisneria, nor are they quite as long. In its natural habitat in northern Australia Vallisneria nana reaches a height of only 15 cm, but in aquariums it typically grows to 30-50 cm, which no doubt reflects the different light and nutrient conditions. Vallisneria nana produces offshoots very readily, so compact vegetation will soon develop in good conditions.

PRICE GROUP: POT 7



LIGHT:	LOW	O ● ● O HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O O DIFFICULT

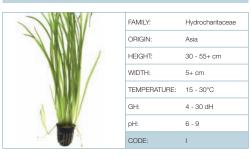


Vallisneria spiralis 'Tiger'

055A



Vallisneria spiralis 'Tiger' is an excellent plant for beginners, growing in virtually all light and water conditions. The name 'Tiger' is due to its striped leaves. The relatively short leaves make it suitable for small aquariums, and the leaves are also narrow so they do not overshadow smaller plants. Forms runners easily, and is thus easy to propagate.



LIGHT:	LOW	O • • • HIGH
GROWTH RATE:	SLOW	O O O FAST
DEMANDS:	EASY	O O DIFFICULT



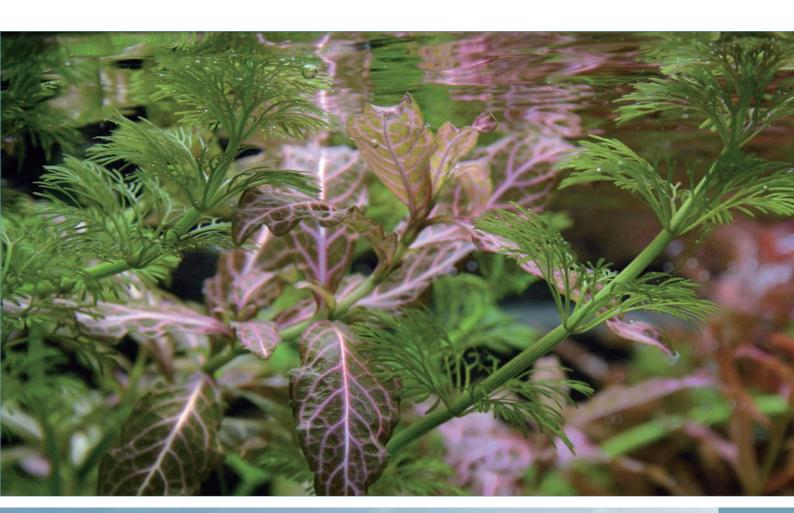
A special moss originally seen in Japanese aquariums and known as "Amazonia Willow Moss". Also called "Christmas tree moss", because of its side branch structure which distinguishes it from ordinary Taxiphyllum barbieri (Java moss) and looks like fir tree branches. It is more demanding than ordinary Java moss and grows more slowly. It attaches readily to roots and stones, and as it spreads in the water it needs pruning to keep its shape attractive. See also Taxiphyllum barbieri.

PRICE GROUP: AquaDecor



LIGHT:	LOW	○ ● ● ○ HIGH
GROWTH RATE:	SLOW	● ○ ○ ○ FAST
DEMANDS:	EASY	O O O DIFFICULT







PLANT SUBSTRATE

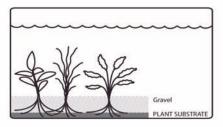


PLANT SUBSTRATE acts as a long term nutrition store for waterplants, so ensuring magnificent and healthy waterplant growth. PLANT SUBSTRATE is a natural concentrate of clay and sphagnum, laid at the bottom of the gravel layer when you build your aquarium.



Use

PLANT SUBSTRATE is laid in a 1 cm thick layer on the bottom of the aquarium, when the aquarium is built. A layer of gravel of minimum 3-4 cm thick is then laid over the substrate. The gravel acts as a barrier between the concentrated PLANT SUBSTRATE and the water. Plants are planted in the gravel in the normal way and new roots quickly form in the substrate. When planting, disturb the substrate as little as possible, to avoid clay and sphagnum particles being mixed into the water.



PLANT NUTRITION* capsules

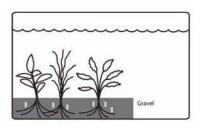
12 PCS. / 36 PCS.



PLANT NUTRITION* capsules supply your waterplants with all the nutrients they need for healthy and sustained growth over a long period of time. Nutrition release rates do not exceed plant absorption rates, so ensuring nutrition remains within a closed cycle between capsules and plant roots.



1-3 capsules depending on plant size and expected nutrition requirements, placed by plant roots, minimum 4 cm below the gravel surface. Carefully cover any holes made with sand and gravel. The capsules are particularly suitable for stem plants and for larger rosette plants (such as the *Echinodorus* species). Large and rapid growth plants can require up to 3 capsules. 1-2 capsules are recommended for smaller plants. Where planting density is high, each capsule supplies an area of 5 x 5 cm. New capsules are added after 6-12 months.



PLANT NUTRITION liquid

100 ml / 250 ml / 500 ml / 5 L



PLANT NUTRITION liquid contains the most important nutrients for healthy and sustained aquarium plant growth. PLANT NUTRITION liquid does not however contain nitrogen (N) or phosphorus (P).

PLANT NUTRITION *liquid* therefore supplies the nutrients plants easily run out of and which plants ideally absorb via the leaves. PLANT NUTRITION *liquid* was previously marketed under the 'Tropica Mastergrow' brand.



Use

PLANT NUTRITION liquid is added each week when changing the water. A flask is used to ensure an accurate dosage. The fertilizer is forced up into the fertilizer chamber by a single press on the flask. We recommend 5 mL per 50 L water per week, but recommend that this is set in accordance with plant requirements. For example, light leaves often indicate lack of nutrition, but can also be due to poor growth. Echinodorus bleheri is a typical example of lack of micro-nutrients. Regular dosing with PLANT NUTRITION liquid can restore green and luxuriant leaves. Note, however, that PLANT NUTRITION liquid is a fertilizer and not a medicine for dying plants. It is recommended that minimum 25 % of the aquarium water is changed every second week. If undesirable algae growth does occur, then we recommend increasing water change frequency (up to 50%) and planting additional rapid growth waterplants such as Hygrophila, Vallisneria and Egeria.







PLANT NUTRITION* liquid

100 ml / 250 ml / 500 ml / 5 L



PLANT NUTRITION* liquid contains all essential nutrients needed including nitrogen (N) and phosphorus (P).

PLANT NUTRITION* liquid is suitable for aquariums with many plants in relation to the number of fish, where plants can lack nitrogen (N) and phosphorus (P) which otherwise would be supplied by fish excrement and food remnants.



Use

PLANT NUTRITION* liquid is added each week when the water is changed. We recommend 5 mL per 50 L water. However, we recommended that this is set in accordance with plant requirements. PLANT NUTRITION* liquid contains, in addition to micronutrients, all essential macro-nutrients. The fertilizer is particularly suitable where plants display a lack of nutrition. However note that if algae growth starts, PLANT NUTRITION* liquid will promote this growth. PLANT NUTRITION* liquid contains nitrogen (N) and phosphorus (P). Dosage must therefore be adapted to plant absorption rates, to avoid undesirable algae growth. Where signs of algae growth develop, reduce the dosage by 50% and increase water changing frequency by 50 %. Changing the water not only reduces the concentration of nutrients in the water, but also removes algae spores, remnants and other accumulated elements from the aquarium water.

DID YOU KNOW: Tropica AquaCube - water plants the modern way

A Tropica AquaCube is a fascinating little underwater universe with different varieties of water plants you can mix and match to create the mood you want. A Tropica AquaCube is easy to decorate and with the wide selection of plants and accessories available, each one is unique.









TROPICA'S ABC

The ABC in this catalogue is just a selection of the information you can find on our web site – a knowledge portal that we constantly expand and develop for the benefit of distributors and aquarium enthusiasts all over the world.

On this page, you can read about and see the plant Marsilea hirsuta as an example of the way we pass on our knowledge:

The pictures show the plant at three stages – from sales pot (A) to planting (B), to the flourishing result after just 55 days (C) with the right fertilizer, lighting, and CO₂ conditions. *Marsilea* has long, clover-type leaves above water, but beneath the surface it forms new, more compact underwater leaves. The leaves should be cut off before planting and the plant divided into six to eight pieces that should be planted at intervals of about 10 cm in the foreground of the aquarium. The plants then rapidly grow together to form a beautiful green carpet.

Help us become better. You are always welcome to send us an e-mail with your ideas and wishes for more information on our plants. Send them to tropica@tropica.dk.







THE FASCINATING BEAUTY OF AN UNDERWATER UNIVERSE

Most people know the feeling of being drawn in by the luminous underwater cosmos in a beautiful aquarium. Unconscious of time, it is possible to sit and watch the background and the movements for many minutes, perhaps even for hours. It is this serenity that brings the urge to have your own aquarium as a hobby. In fact an aquarium is the combination of several different hobbies. Some people focus on the kaleidoscope of different fish, while the plants are just decorations. Others try to re-create a particular aquatic environment with fish, plants and decorations, as it exists in the wild somewhere in the world. Others again are interested in breeding a particular species of fish or growing particular plants, perhaps because they are rare or present an extra challenge.

In the field of aquaculture some people want new plants and regular variation in their aquariums. Others are inspired by the Japanese photographer and aquarium artist Takashi Amano, who creates large, integrated landscapes that take time to develop and call for a great deal of care and patience.

Before going out to buy your first aquarium, it is important to decide what exactly you want to do with it. There are endless possibilities. The next pages outline what needs to be taken into consideration, and how to make a good start, once you have decided.



The installations must work properly before the plants are added

If you have decided to take up aquatic plants as a hobby, and perhaps dream of a Japanese-style landscape aquarium, you need an aquarium with a maximum capacity of 150 litres and the largest possible standard aquarium lamp. Larger aquariums require special lamps. In addition, serious problems with algae are far more difficult to overcome in a large aquarium than in a smaller one.

You have to decide whether to have an ordinary enclosed aquarium, or an open one. Open aquariums are lit by hanging lamps, and the surface becomes an extra dimension, allowing for additional interest, such as floating plants.

When you have selected the aquarium, you need a suitable filter. In an aquarium where plants are the main focus, the best choice is a small, motor driven filter with sufficient capacity to keep the water clear of algae and set up sufficient circulation to maintain an even temperature and CO_2 saturation in the water. Avoid air-driven filters and bottom filters as they simply encourage the growth of algae, and in an aquarium with only a few fish and small quantities of food, a small filter is perfectly adequate. On the other hand if your taste is for shoals of fish and "cut flowers" in a giant aquarium, you will of course need to install a filter with sufficient capacity to deal with the amount of food the aquarium is subjected to

The aquarium needs shade, but also light and CO,

An aquarium should never be placed where it receives direct sunlight. Just a little direct sunlight in the course of a day is enough to cause algae to grow explosively. Naturally, the plants need light in order to live and grow, and therefore artificial light is used for up to 12 hours daily.

Fluorescent tubes are the most common light sources, although many types of tubes and reflectors are available, and aquarium lighting can be provided in many ways. Hanging lamps are another option for open aquariums – so it is not easy to specify precisely how to ensure good lighting. As a rule of thumb, however, there should be not more than 20 cm between fluorescent tubes in a 40 cm high aquarium, 15 cm if it is 50 cm high, and 10 cm if the height is 60 cm.

It is possible to compensate to some extent for reduced light by raising the concentration of $\rm CO_2$ in the water to about 30 mg/l using a $\rm CO_2$ system. If you have good lighting and rapidly growing plants, the $\rm CO_2$ concentration should be 15-30 mg/l, and should never drop below 10 mg/l. Plants cannot photosynthesise without carbon, and for the vast majority of plants $\rm CO_2$ is the only carbon source in the aquarium.

Light and CO_2 requirements depend on the choice of plants. Anubias, Cryptocoryne, Microsorum, Vallisneria, Echinodorus, Taxiphyllum, Monosolenium and Sagittaria are examples of plants which do not demand very much light or CO_2 . They are therefore good plants for beginners, since reduced light and CO_2 means less need for attention and a lower risk of algae.

A beautiful result starts at the bottom

Never buy gravel for an aquarium before deciding what else you want in the aquarium. The bottom substrate must of course allow the plant roots to grow and hold the plants in place. But the colour of the substrate has an effect on the plants, whether the fish will feel secure, and on the overall impression the completed aquarium will give. A light substrate will throw light back for the benefit of the plants, while a dark one will "steal" light. On the other hand, a dark substrate compensates for lack of depth in an aquarium, highlighting the fish and the colours of the plants. Ultimately it is a matter of taste, and innumerable colours of aquarium gravel are available.

Gravel with a grain size between 2 and 4 mm provides good conditions for the plant roots to grow in. Rough-edged gravel is easier to

keep in place than rounded grains if you want to build up contours that vary in height. Both types are equally good for the plants. Even if the water is only medium-hard, if KH > 5 dh, it is always necessary to choose calcium-free gravel.

The bottom can be decorated with stones, roots or whatever looks attractive, as long as you make sure that it does not give off harmful substances to the water. If you collect stones in the countryside, soak them in clean water for a couple of days, then scrub them completely clean with a stiff brush. Great care should be taken with tree roots found in the wild. They often still contain sap, which can have disastrous effects on both fish and plants.

Designing a beautiful aquarium

Before you start, it is worth making out a rough plan and looking at the front of the aquarium. Divide the area into nine rectangles (3 rows and 3 columns). The points where the lines cross each other are the best positions for the most striking solitary plants and highlights, to form what is known as "the golden section". It will bring asymmetry into the aquarium, which catches the eye and creates far more interest than a dull symmetrical structure.

It is important to exploit the effect of depth in the aquarium. Let the substrate slope from just a few centimetres at the front, and rise to as much as a third of the height of the aquarium at the back, using stones and roots to create variation and different levels. It is also a good idea to create dark or "blind" angles with crevices behind objects, or a hollow behind a stone or tree root.

The plants that grow tallest should be placed at the back of the aquarium, with lower ones in the foreground to enhance the effect of depth. Choose plants with leaves in varying shapes and sizes to make a contrast, so that your aquarium does not look like green wallpaper. Groups of red plants are also effective in breaking up the green. Remember to allow for open spaces around the solitary plants too. AquaDecor Bogwood and DecorRock are useful in open spaces, because they are so easy to move about and adjust until they give just the effect you want.



CARING FOR YOUR UNDERWATER GARDEN

An aquarium, like a garden, needs weeding and the plants must be pruned now and then, or it gets overgrown. But care is necessary to maintain the balance in the aquarium, and not to create ideal conditions for algae by pruning too severely.

Plants with stems should always be pinched off before they reach the water surface, as they will otherwise overshadow themselves as well as other plants. The new side shoots will make the plant more compact. The top shoots can be planted on the bottom again, where they will rapidly develop roots. If *Anubias, Bolbitis* and *Microsorum* grow too large, part of the plant can be removed by carefully cutting

part of the horizontal stem (the rhizome) away. If groups of *Crypto-coryne* are growing too close, suitable sized sections of them can be loosened with a sharp knife and pulled away from the bottom while holding the remaining plants in place. Thick clumps of *Sagittaria subulata*, *Echinodorus tenellus or Echinodorus quadricostatus* can be thinned out by cutting the stems between the runners and removing individual plants. The larger *Echinodorus*, *Aponogeton* and *Nymphaea* can only be pruned by removing some of the leaves. It is therefore wisest to choose plants whose maximum size is suitable for the aquarium in question.





Photo: Jan Ole Pedersen Illustration: Hydrocotyle verticillata (039)

Keep an eye on water quality

The hardness of the water and its $\rm CO_2$ saturation play an important part in how well plants and fish thrive. Typically the total hardness of the water is specified (as GH), which indicates the level of calcium and magnesium. It is also important for certain fish species, because calcium and magnesium are nutrients for the plants. The plant aquarium owner is far more interested in the carbonate hardness (KH), which indicates the bicarbonate content (HCO $_3$) of the water, because KH, the pH level and the CO $_2$ content are closely linked. Put very simply, most plants can be grown when the KH is between 3-12, pH is 6.5-7.5 and the CO $_2$ content is 10-30 mg/l. The equipment for measuring these values can be bought from any aquarium dealer.

Aeration pumps and motor filters which cause strong ripples in the surface are prohibited in plant aquariums because they drive CO_2 out of the water and cause the pH level to rise. If the pH level is too high, even with still water in the aquarium, CO_2 must be added using the equipment mentioned earlier. If the KH is too low, a supplement can be bought from the aquarium dealer. If on the other hand it is too high, matters become slightly more complicated. It is possible to add rain water, but because of air pollution it is safest to buy a demineralising system, which will convert tap water to soft water. This solution does require more space, however, for the extra installations.

Many fish mean frequent changes of water

Aquarium owners distinguish nitrogen (N) and phosphor (P) from all the other nutrients in the water, because most people keep far too many fish, and feed them too generously. If at the same time water is not changed often enough, they have the same nitrogen and phosphor pollution which encourages algae and causes hot debate in the marine environment debate in the media. Only a few fish, no excess feeding, and frequent water changes are the keys to avoiding excess nitrogen and phosphor. At least 25% of the water should be changed every two weeks. A siphon draws the water off and at the same time sludge and left-over food can be carefully removed. If done thoroughly, this saves "spring cleaning", which disturbs the balance in the aquarium.

As a rule, there will be sufficient magnesium and calcium in tap water, except in areas with very soft water. The other nutrients (potassium, sulphur, iron, manganese, copper, zinc, boron and molybdenum) must be added in the form of aquatic plant fertilizer such as Tropica AquaCare. Remember that every new aquarium needs a period of one or two weeks to settle down. During this time there should be no fish in the aquarium, except for types that eat algae, which can be introduced after the first week.

Tropica AquaCare - aquatic plants love it

We give Tropica aquarium plants everything they need to grow large, healthy and beautiful. But even the most robust plants make some demands on their surroundings if they are to grow optimally. Tropica AquaCare is a range of aquarium fertiliser products developed on the basis of more than 35 years of experience of tropical aquatic plants, and it has been thoroughly tested in a range of different aquarium environments.

Tropica AquaCare takes full account of the needs of fish and plants, ensuring a healthy balance in aquarium water which resembles the natural balance itself. All the same, plant food should only be given where necessary. As a rule of thumb, if the new leaves on the plants are dark in colour, then they do not need much fertiliser, while if they are pale, it is a good idea to give them a little more. It is also necessary to take into account that in soft water the plants only need half as much fertilizer as in hard water.





DON'T LET ALGAE SPOIL THE VIEW

The growth of algae is the chief reason why aquarium owners give up their hobby. They can easily seem overpowering, and about 30,000 species of algae are known. Some of them can double their numbers in two hours if conditions are suitable. And there is no way of wiping out algae entirely in an aquarium without killing the plants at the same time. But if you follow the advice on the following pages you will have far better chances in your efforts at keeping the unwanted elements to a minimum.

First of all it is important to realise that there will always be algae in an aquarium, and they will always get out of control if conditions allow them to. Algae are small plants, and live largely on the same nutrients as aquarium plants. While aquarium plants draw their nutrients from

the light and water as well as their roots, algae only live on light and nutrients in the water. So the main cause of algal growth is an incorrect balance in the water. Too many fish in relation to the plants is a frequent reason for the formation of excess phosphor and nitrogen, which promote the growth of algae. Even if the balance between plants and fish is correct, however, overfeeding must be avoided. In fact the algae benefit first and foremost from the food. Lastly, sunlight must be avoided altogether. Fluorescent light, e.g. from Philips TLD 93, 94 and 95 (TS 930, 940 and 950), encourages plant growth at the expense of the algae. Simply observing these simple rules will to a large extent help to prevent algae from spoiling the pleasure of a beautiful aquarium.



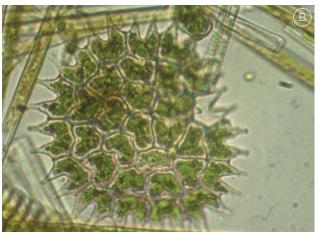
The aquarium owner's five worst enemies

About 30,000 different species of algae are known. The great majority of them are so rare or microscopic, that they are never seen. If an aquarium is invaded by algae, they are almost always one of the five types described below.

Green water is caused by microscopic single-celled plankton, which can reproduce so rapidly that the water appears green. These green algae require almost the same lighting and nutrient conditions as the aquarium plants.

Fuzz algae are green algae which form a furry light green layer of fine threads on stones and leaves. The threads grow up to 3 cm long, then snap off and often continue to live as freely floating threads.

Thread algae are green algae which form colonies of long threads between the plants. Large colonies can be removed with a rough surfaced flower stick.



Brush algae are red algae, but the name is misleading, since they are most familiar as blue-black threads up to 2 cm long, which grow from the tips and edges of leaves. Red algae are less dependent on light than green algae, because they are able to absorb certain organic nutrients from the water.

Blue-green algae can absorb light like green algae as well as organic nutrients from the water like red algae. They often form tangled bluish green rafts without any visible structure, and smell of earth.

There are many different species in each of these categories, but they can be identified and kept down in very similar ways.



The aquarium owner's most useful weapons

Algae are a pest, and therefore several chemical remedies have been produced, with promises of good results. Often, however, they damage the plants as much as the algae, and do not remove the cause of algal growth, so the pest is certain to attack again. The only reliable method is the patient use of natural, biological remedies. Here you can see what remedies are available, but you will have to try them out to find the right combination.

Large quantities of fast-growing plants, e.g. *Hygrophila*, *Egeria densa*, *Vallisneria* and *Echinodorus bleherae* (bleheri) take the nutrients from the algae. *Ceratophyllum* give off a substance which inhibits the growth of algae. Floating plants like *Riccia* are useful when light is the cause of algal growth. Adding CO₂ promotes the growth of the plants at the expense of the algae. Make sure there is a good balance of fish and plants and avoid overfeeding. Keep fish that eat algae such as *Crossocheilus siamensis*, *Octoinclus affinis* and *Poecilla*, if possible together with *Japonica*-shrimps and Apple-snails.

Replace 50% of the water each week if you have trouble with algae, and avoid using a bottom filter or at least ensure that the flow rate is slow, so that the bottom filter does not stir up the nutrients in the water. Light up the aquarium for a maximum of 12 hours a day. Longer than this will not benefit the plants but encourages algal growth. Avoid sunlight altogether. Just half an hour each day is enough to make the algae grow uncontrollably. Always remove as much as possible of the algal growth by hand, and cut badly attacked leaves away completely. Always bear in mind that even a very slight change in the aquarium may tip the balance in favour of the algae, and you have to try all over again. That is part of the challenge of your hobby.







VISIT TROPICA ONLINE

Visit us at www.tropica.com. Here you will find a fully updated list of all our water plants. As in this catalogue you may read a short article and see beautiful pictures and illustrations of each plant. At the same time you may send the articles to other enthusiasts around the world since all our articles come in English, French, German and Danish. On the website you can find a Tropica dealer near you and you can make a subscription to the Tropica Newsletter.



CHOICE OF LANGUAGE

Choose your language here - Danish, English, German or French.

SEARCH

Simple, rapid searching – just enter parts of the plant's name or its Tropica number.

ADVANCED SEARCH

Advanced searching that offers you the opportunity to search for plants that make no great demands. on growth conditions in the aquarium, for instance, or plants from certain parts of the world. Just choose one or more criteria and press "search". The result will be listed in the list of species.

NEWSLETTER

We publish the Tropica Newsletter five times a year and it contains plant and product news. Our Newsletter is a step towards sharing the knowledge we have with our customers and consumers. A step designed to help spread the interest in this fantastic hobby and, ultimately, create greater customer satisfaction.

Newsletter 2007 vol. 2: THE HALL OF FAME



This is a presentation of aquarium plant classics seen with Tropica's eyes – of the genuine classics that we can supply and also our idea of the next. Classics are easily recognisable (shape and colour) and difficulty is usually low. This makes them ideal for beginners and experienced aquarists alike.

LATEST NEWS...

You will always be able to see and read the latest news from Tropica on our front page and then click straight to the full article. The articles are about our latest plants as well as those we have been producing for some time where new knowledge about them justifies an article. In addition, there are articles about our fertilizers and about Tropica in general.

Pogostemon helferi – a different but beautiful foreground plant



Pogostemon helferi is a beautiful foreground plant with a difference that forms a dense carpet of dark green leaves under the right growth conditions. Its curly leaves and unusual leaf form makes it stand out from the crowd of other foreground plants and thereby creates an attractive variation and renewal of the planted aquarium...

LIST OF SPECIES

You will find portraits of all our plants here – you can search for various categories of plants by browsing through the menu such as colourful plants and plants that are suitable in aquariums with Discus.



Nesaea pedicellata is an attractive, decorative and easy stem plant. Leaf colours range from green to yellow and orange and reddish shades depending on growth conditions in the aquarium. The stems keep their intense red colouring, something that can also be seen when the plant is grown in a swamp...

AQUARISTIC

Aquaristic is one of the menu items – it contains a link to our latest plant article and the menu to the right contains a complete list of these articles and other subjects under Aquaristic, including information on the biology of aquatic plants.

Hemianthus callitrichoides "Cuba" – a beautiful carpet in the AquaCube and in the aquarium



Hemianthus callitrichoides "Cuba" (048B) was discovered by Tropica's founder Holger Windeløv during the dry season in a rocky river not far from Las Pozas about 90 km east of Havana in Cuba where it was rooted in gravel between large rocks...

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